july 1956

office management

the magazine for management executives

Yesterday's luxury hotel is today's handsome office. See page 32

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- Mathematical models in management—*their purpose and advantages*
- Scientific methods replacing "intuition", NOMA conference hears
- Supervisors can tell our fortunes—*if they have authority*

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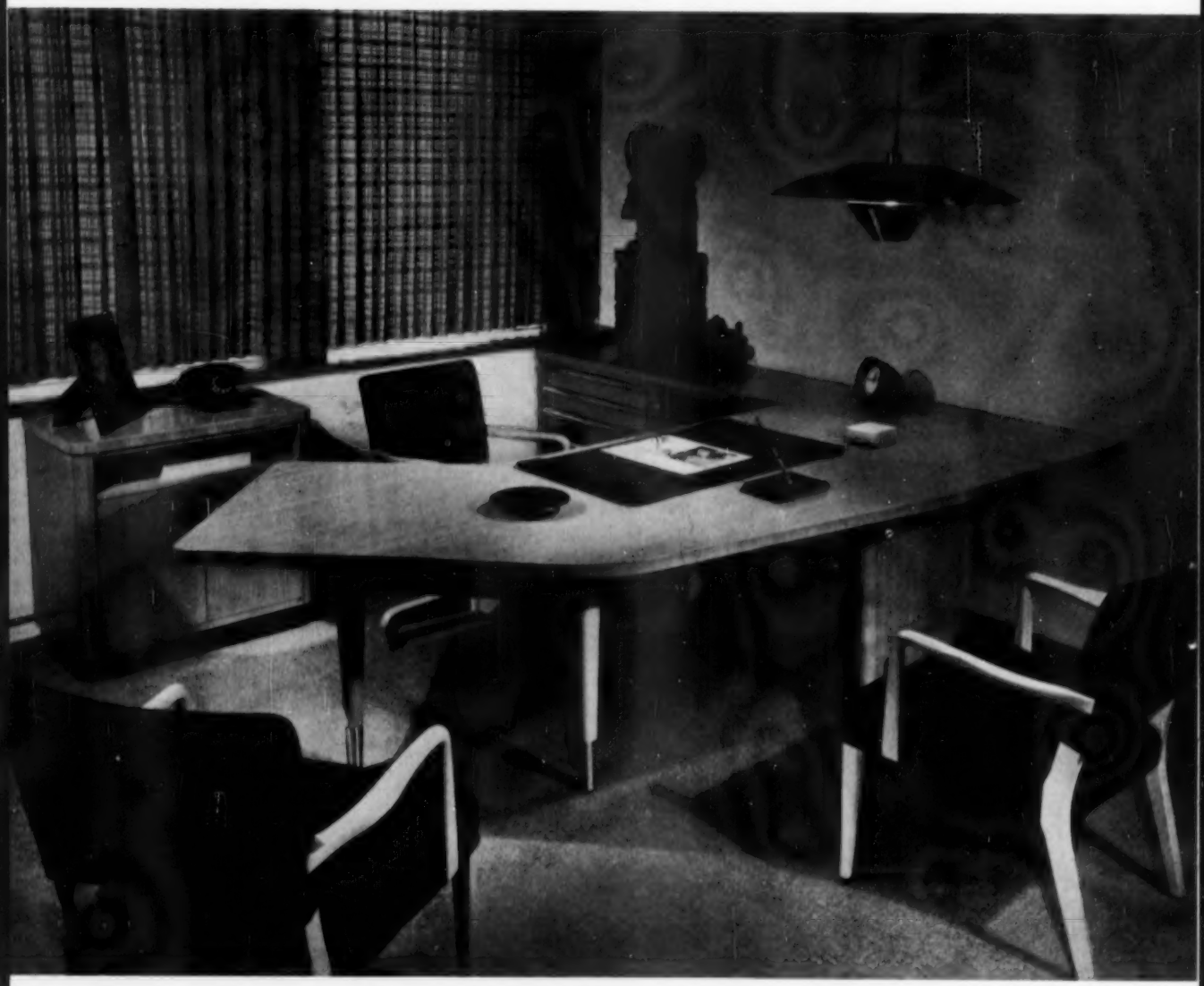

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office management

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JUST to prove that esthetic considerations need not go by the board when a handsome and famous hotel is converted into an office building, we offer in evidence this month's cover—the reception lobby of the Pennsylvania Lumbermen's Mutual Insurance Company, in its new offices in what was formerly Philadelphia's Ritz-Carlton Hotel. See story, page 32.

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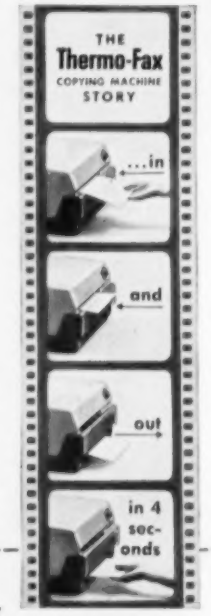

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Executive development held to be a major problem

Developing a top management team is the biggest worry of most company presidents, said Lyle M. Spencer, president of Science Research Associates, addressing a recent luncheon meeting of the Manufacturers' Association of Racine, Wis.

"The key difference between owning a company and running a profitable business," he said, "lies largely in the success a president achieves in organizing an effective, functioning team of top executives. Finding, training, and motivating the key executives, through whom a president must accomplish his work, is the thorniest and longest-lasting problem he faces."

Mr. Spencer referred to a recent survey conducted by the Young Presidents' Organization, composed of men and women who, before reaching the age of 40, became presidents of companies employing at least 50 workers and having one million dollars or more in annual sales volume. The survey, he observed, had led to a definition of four outstanding characteristics of a good executive:

"1. The members of a good executive team possess remarkable flexibility. Regardless of their training and experience within the company, they are receptive to new ideas, able to adapt themselves quickly to changing conditions, and can withstand setbacks without losing their drive and enthusiasm.

"2. A good executive has depth. The temporary absence of one member of the team limits the organization and perhaps decreases its efficiency, but it does not leave the company paralyzed.

"3. The members of a good executive team each build their own efficient division of the company with a minimum of routine supervision. The executive team members and their divisions are in a state of healthy rivalry with each other.

"4. The executive team functions by balancing and controlling two impulses which are in essential conflict with each other. On the one hand, there is a desire for maintaining, improving, and continuing the status quo, for preserving the business and for correcting the things that hamper the present functions of the business. The second impulse which drives the executive team is the impulse toward growth, toward developing new prod-

(*To page* 10)

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McBee Keysort can give you *fast, accurate* reports on every phase of factory operation. Whatever your size or set-up. At remarkably low cost.

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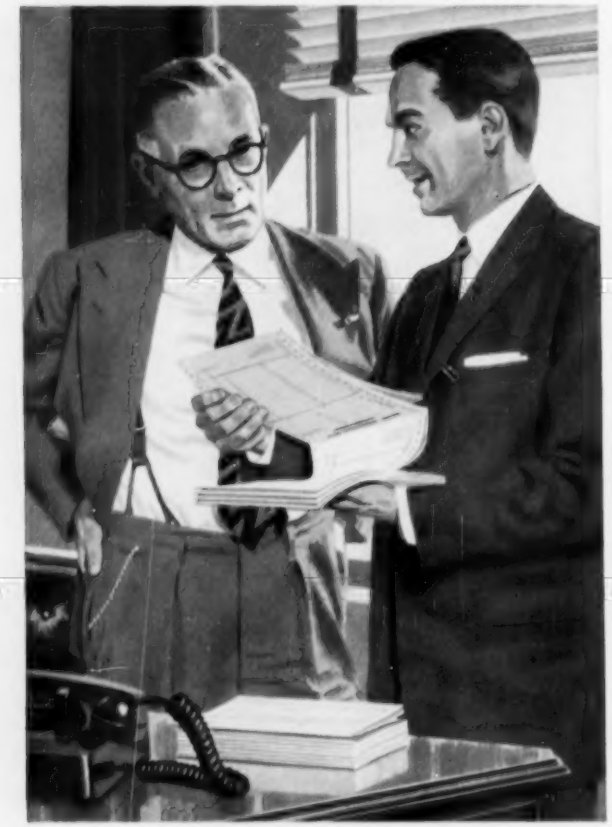
HOW AUTOMATION CAN PAY FOR

Big Business is turning to automatic processing of data and automatic transmission to secure greater speed, efficiency, business control and accuracy in making decisions that are important to its operation.

Small Business has the same need for automation's new benefits. The Moore man applies principles of ADP to give every business maximum data processing benefits with the investment tailored to the budget.



The immediate benefits of planning for automation in office procedures are the results of the systems approach . . . the design of a straight-line work flow that provides for accurate, speedy processing of data. For the larger corporation, such procedure analysis may only correct a simple routine which proved to have been the bottleneck of the entire operation. For the smaller company it may involve a complete integrated system from order-taking to management analysis or any other procedures needed.

Moore manufactures forms only, and not ADP machines. For that reason it approaches a systems problem with an open mind. It considers the automation required . . . and plans the correct forms and constructions so that an entire system is integrated for efficiency and economy.

When a business gets just the automation it needs to do its work better, excessive investment is not called for. The system fits the purpose and the purse, and introduces benefits on a pay-for-itself basis. Calling the Moore man can be the first step in this process.

Distance is no disadvantage when ADP shortens the time lag of an order. By cutting 'travel time' between receipt of an order and its entry at the warehouse, ADP improves customer service and speeds operations connected with shipping, invoicing and tabulating sales analyses.

SEE CASE HISTORY ON FACING PAGE ▶

ITSELF WITH MOORE'S A D P*

*Automated Data Processing

SALES OFFICE The customer order is entered on a Moore 3-part form. One part serves as an acknowledgment, and is sent to the customer. A by-product of this typing is a tape that transmits information to the warehouse by wire.

WAREHOUSE The incoming wire furnishes order information, and Jeanine uses it to prepare a Moore 5-part form, containing shipping data and advices. Jeanine also cuts a tape, a by-product of her typing, with invoice information on it.

INVOICING The tape Jeanine prepared is used by Grace, back in Billing Dept., to prepare customer invoices. Grace also cuts a tape, simultaneously, and this contains selective information for tabulating and sales analysis.

STATISTICS The small company may turn over its selective tapes to service bureaus, where they're converted to punched cards for tabulating into sales summaries. Many large concerns are equipped to do this work on their own premises.

Moore forms are the heart of the system

...they deliver the A D P benefits

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ucts, new markets, new kinds of business enterprises more profitable than the ones the company already has."

Mr. Spencer said also that the executive teams of most companies are "surprisingly small." He added, "they usually include only three or four persons besides the president: an administrator, who serves as the president's alter ego and keeps the company's day-to-day operations running smoothly; a sales manager; a production chief; and a financial officer who manages the company's capital. Other business posts rarely achieve top ranking in a company's inner circles."

Describing a theoretically average executive, Mr. Spencer suggested that he would probably have these characteristics:

"1. He is currently holding a job that carries more responsibility than any job he has previously had.

"2. More likely than not, he has come up from the ranks within the company.

"3. He has less education than his president and he feels defensive about it.

"4. He is older than the president although he has held his present post for only three years.

"5. Planning ahead, he looks forward to making a long-time career in his present company. Although he knows his chances of becoming president are small, he is ambitious to expand the scope of his present job by helping his company to grow.

"6. His present salary is about $13,200 yearly. Although he has succeeded in the business world faster than he expected to, he expects to earn a materially greater amount in the future, and the chances are one in three that he is actively dissatisfied with his present income."

According to the speaker, the typical executive considers that his basic reward derives from his own good performance on the job and the feeling it brings that he has accomplished something and won the esteem of his fellow executives, the president, and his subordinates. "Most executives," he pointed out, "crave these satisfying experiences of accomplishment. They need to respect themselves and have the respect of their fellow workers. Most key executives have a sneaking suspicion that they are really not quite good enough for their present jobs. Their continuing need to reassure

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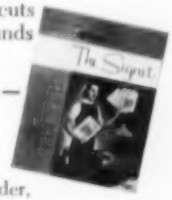

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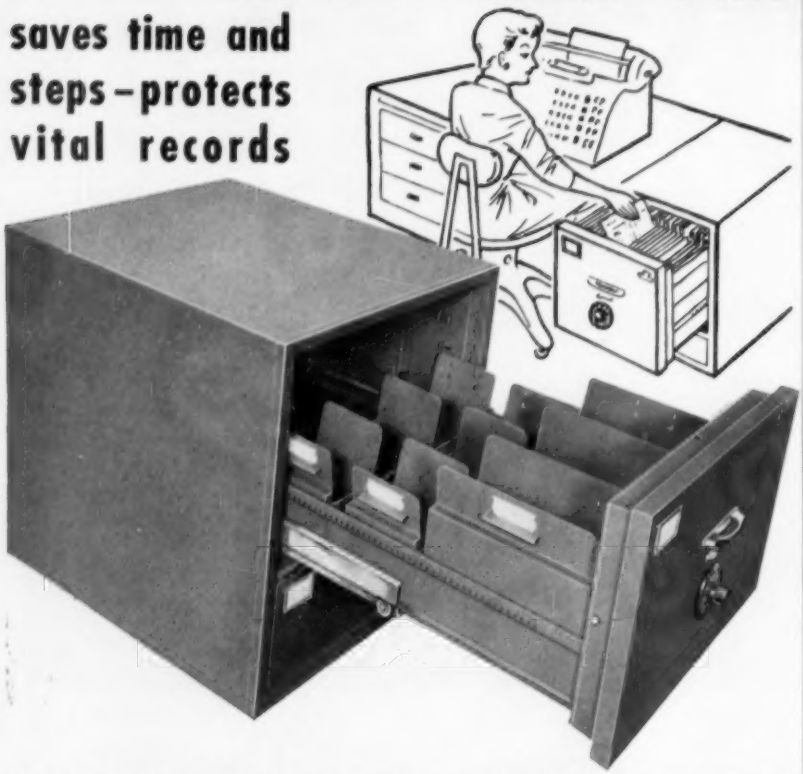

It's designed to be placed next to a desk, stands 29½ inches high. The big upper drawer holds ledger cards up to 22 by 13¾ inches. The lower drawer is for storage of inactive records.

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themselves about their own competence is a major factor in maintaining the drives that produce business accomplishment."

Secretaries will convene in Detroit this month

The National Secretaries Association (International) will hold its eleventh annual national convention in Detroit, July 18-21. Several thousand secretaries from all parts of the United States, Canada, and Puerto Rico are expected to attend.

Plans for the convention have been announced by Miss Cassandra Waterman, of Niagara Falls, N. Y., NSA president.

At the official opening of the program, on Thursday, July 19, Mrs. Alice Leopold, Assistant to the Secretary of Labor for Women's Affairs, will deliver the keynote address. Other events are designed to expand on the theme of this year's convention, "To Open More Doors." Among these are a "Three B's Workshop," based on the NSA motto, "Better Learning, Better Letters, Better Living," which will feature speeches by members of the editorial staffs of leading magazines in the women's, business education, and secretarial fields.

A feature of the convention will be the selection of this year's "Secretary of the Year," to be chosen by a panel of judges on the basis of the education, experience, appearance, and poise of the candidates.

In addition, there will be a dinner honoring secretaries who have attained the rating of Certified Professional Secretary. There are 772 CPS holders in the country at present, but the NSA expects that the number will increase to a thousand or more when the results of this year's qualifying examinations have been evaluated.

Other events will include business sessions, tours of industrial plants, and the annual banquet, at which new officers will be installed.

In Short—

Office Executives Association elects officers for 1956/57

The Office Executives Association of New York, Inc. has elected J. Arthur Grundy, Remington Rand Div., Sperry Rand Corp., as president. OEA's new

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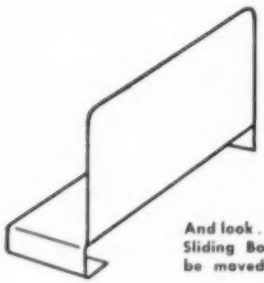

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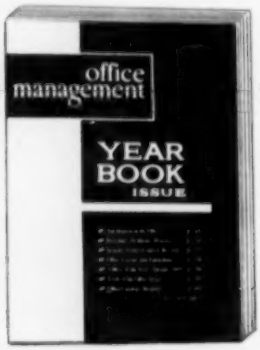
"In my opinion, the context of the book was **excellently presented.**"

"We believe that you have accomplished a very important function in collating **so much information into one issue.**

"I read the YEARBOOK from cover to cover and passed it along to some of my assistants who enjoyed the various articles. **Keep them coming every year.**"



The reception of the first annual YEARBOOK published in January, 1956, confirmed the *ever-increasing* need for an annual review of the fast-moving trends . . . of the revolutionary changes that are taking place in office techniques and in the vast number of types of machines and equipment.

When published as a regular issue, the overwhelming Yearbook material crowded out some of the regular current features.

OFFICE MANAGEMENT has therefore decided to make the YEARBOOK a separate bonus issue for our readers to give them the vast store of reference material without affecting the twelve monthly numbers of OFFICE MANAGEMENT, with their current news and regular editorial features.

The OFFICE MANAGEMENT YEARBOOK will be published annually in March.

ADVERTISERS—In planning your schedule for 1957, arrange now to include the OFFICE MANAGEMENT YEARBOOK in order to benefit by your earned contract rates. For instance, if you arrange a schedule for six insertions in the monthly issues of OFFICE MANAGEMENT, your 7th or YEARBOOK insertion will enjoy the six-time rate . . . with a 12-time schedule in OFFICE MANAGEMENT, your 13th or YEARBOOK insertion will enjoy the 12-time rate. Forms for the YEARBOOK will close January 15.

office management

The Magazine for Management Executives

212 FIFTH AVENUE NEW YORK 10, N. Y.

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Wayne announces computer courses for July and August

The Computation Laboratory of Wayne State University, Detroit, has announced three one-week courses to be given this summer on various aspects of computers and electronic data processing. The first, called "Automatic Computers, Their Application and Evaluation," is scheduled for the week of July 23rd. The following week will be devoted to "Electronic Data Processing in Business and Government," and the last course, begin-

(*To page* 54)

Coming Events

NSA Convention. Detroit, July 18-21.
Sponsor: National Secretaries Association. *Place*: Hotel Statler.

Conference on Records Management. New York, September 17-18.
Sponsors: National Records Management Council, Inc.; Graduate School of Business Administration, New York University. *Place*: New York University.

AMA Personnel Conference. New York, September 17-19.
Sponsor: American Management Association. *Place*: Hotel Statler.

Instrument-Automation Conference. New York, Sept. 17-21.
Sponsor: Instrument Society of America. *Place*: New York Coliseum.

AIA Annual Meeting. Seattle, September 22-27.
Sponsor: American Institute of Accountants. *Place*: Olympic Hotel.

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Conference on Training in Business and Industry. Lafayette, Ind., September 26-28.
Sponsor: Purdue University. *Place*: Purdue University.

National Supervisory Development Conference. St. Louis, Sept. 27-29.
Sponsor: National Management Association (formerly known as the National Association of Foremen). *Place*: Sheraton-Jefferson Hotel.

CIA National Conference. New York, September 30-October 3.
Sponsor: Controllers Institute of America. *Place*: Waldorf-Astoria Hotel.

Cincinnati Business Show. Cincinnati, October 9-11.
Sponsor: Cincinnati Office & Business Equipment Show Committee, Inc. *Place*: Hotel Sheraton-Gibson.

NIGP Annual Conference and Products Exhibit. Chicago, October 14-17.
Sponsor: National Institute of Governmental Purchasing, Inc. *Place*: Conrad Hilton Hotel.

AMA Office Management Conference. New York, October 15-17.
Sponsor: American Management Association. *Place*: Hotel Sheraton-Astor.

National Business Show. New York, October 15-19.
Sponsor: Office Executives Association of New York (New York Chapter of the National Office Management Association). *Place*: New York Coliseum.

ABA 82nd Annual Convention. Los Angeles, October 21-24.
Sponsor: American Bankers Association.

SPA International Systems Meeting. Philadelphia, October 22-24.
Sponsor: Systems and Procedures Association of America. *Place*: Hotel Bellevue-Stratford.

IMS Time and Motion Study and Management Clinic. Chicago, October 31-November 2.
Sponsor: Industrial Management Society. *Place*: Hotel Sherman.

AMA Finance Conference. New York, October 31-November 2.
Sponsor: American Management Association. *Place*: Hotel Roosevelt.

NMAA Electronic Business Systems Conference. San Francisco, November 8-9.
Sponsor: Western Region, National Machine Accountants Association. *Place*: Sheraton-Palace Hotel.

AMA Insurance Conference. Chicago, November 14-16.
Sponsor: American Management Association. *Place*: The Palmer House.

Office Automation Conference. New York, November 26-30.
Sponsor: Fordham University School of Business.

Automation Exhibition. New York, November 26-30.
Sponsor: Richard Rimbach Associates, Inc. *Place*: Trade Show Building.

1956 Eastern Joint Computer Conference. New York, December 10-12.
Sponsors: Institute of Radio Engineers; American Institute of Electrical Engineers; Association for Computing Machinery. *Place*: Hotel New Yorker.

with the EDITORS

JULY is with us once again; the thermometer already shows every sign of determination to equal or even outdo its heights of last year. The first half of the year is over; vacations are about to begin; and most of us will be frequently tempted by—and occasionally will succumb to—the urge to put off work and go to the ball game, until cooler weather and new ambition descends upon us again.

WE can declare the "silly season" officially open for 1956, and expect that, this being an election year, in many ways it may be even sillier than usual.

JULY offers other inducements besides its temperatures for a pause, a break in the tempo. It is the midpoint; the end of the first half of the year, and so is a logical moment to stop and review what has happened in the first six months of the year.

A great many significant things have happened, obviously. But within the sphere of commentary of this magazine, one particularly significant fact stands out—stands out all the more strongly because of the fact that it is in contrast with some other trends that appear in our business picture in 1956.

THE PACE and tempo of the office world is still accelerating, the demand for the office's services and products is still outdistancing the supply.

THUS, though the general business boom has slackened in some areas, the complex of services that is the office continues to be an "expanding universe"—even in the industries now facing a lowered demand for their products. In every area of industry, there is increasing emphasis on bettering office production by improved methods, elimination of superfluous routines, mechanization. The demand for the office's services continues to grow; equilibrium is not established.

MOREOVER, in such a fast-moving situation, it's dubious whether a final equilibrium between demand and supply of office services can be established — for several years anyway. For even as an office is geared to meet present needs more efficiently and more economically, the requirements made of that office continue to grow.

THE POSSIBILITIES inherent in the new management sciences now developing are becoming too obvious, and—in a competitive economy —too important, to be ignored. Exploration and utilization of these fields increases the burden—and the role within the company—of the office.

WHATEVER happens in other words, we can expect—and should prepare for—a continuation of the dynamic expansion (and the significant changes in its traditional role) of the office.

Robert M. Smith
Editor

Robert Beeman, *Managing Editor*
Thomas V. Murphy, *Editor-in-Chief*
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ALL-STEEL EQUIPMENT INC.

AURORA, ILLINOIS

editorial

"Faster, faster—"

AT THE RECENT OPENING of the National Cash Register Co.'s new $1,000,000 electronics research and engineering division at Hawthorne, Calif., President Stanley C. Allyn of that company gave strong support to those in the field of office management who advocate faster and more extensive application of electronic devices in the office.

Declaring that "office routines are on the verge of the most sweeping changes since the advent of the cash register and the adding machine in the late 1800's," Mr. Allyn said that while only one American worker in forty at the turn of the century was engaged in clerical work, and only one in ten as late as 1940, one in six is so employed today. Said Mr. Allyn, "Clerical workers outnumber farmers. They are equal to half of all factory workers."

"Last year business in this country invested just about a billion dollars in labor saving office machines," Mr. Allyn said. "But at the end of the year there were an estimated 200,000 more clerks than at the beginning. The addition to clerical payrolls alone just about matched the total invested in labor saving machinery."

Mr. Allyn sees no prospect ahead other than a continued addition to the office work burden, because of industry expansion, industry decentralization, and the continuing rise of office work in government. And in addition to office work costs—clerical wages have more than doubled in the last fifteen years, with fringe benefits added.

Is it possible that, like Alice's Red Queen, the office must always run faster and faster even to stay in the same place?

Mathematical models for today's management

Many executives, engulfed by unfamiliar terms, regard operations research as an occult art; actually, it's merely a refinement of processes as old as management—

by Robert M. Smith
Editor, OFFICE MANAGEMENT

OPERATIONS research, linear programming, game theory, matrix algebra, maxima and minima, mathematical models—many an executive today, engulfed by a sea of new and bewildering terms, feels as though it is only a matter of time until he must abdicate to the mathematicians.

And many an executive, irritated and confused, dismisses all that is implied in these terms as simply another fad.

Actually what do the terms mean in the world of management interests and activities? What do they imply? What effect will they have on business? And what effect will they have, what demands will they make, on the men and women who have been running businesses?

Primarily, new and bewildering as the vocabulary may be, operations research means merely a formalization of thought processes which successful management has had to use for a long time. The new techniques involved in operations research lend a degree of exactness and precision to management decision-making, and they outline a formal pattern by which decision-making is aided.

But management by definition has always had to make decisions. No system yet evolved relieves it of that responsibility.

The new mathematical terms then represent techniques—not a revolution in which the classroom and the blackboard take over business administration. They represent tools and methods which the businessman, faced with an ever more complex set of facts, data and trends on which to base his decisions, can use profitably. Through these techniques, he can resolve a mass of information into a formal simplified pattern which will give each fact its relative importance in relation to other facts.

Most of all the new techniques do not mean that every management man must go back to school to learn advanced mathematics. The mathematics used in attacking various problems from the operations research angle may be very involved; it may be very simple. The type of mathematics used varies with the type of problem. The angle of attack remains the same. Operations research in other words is primarily a way of doing things, a method of attacking a problem. As a method, it may employ different tools—different techniques — under different circumstances. As a method, it will always follow the same general overall pattern, even though the particular techniques used within the pattern differ.

Management needn't know techniques

As long as management learns the pattern, the way of doing things, it can profit by operations research by employing technically trained personnel—mathematicians, engineers with an extensive mathematical background, etc. to choose the particular technique best suited for use in each given problem. It is not necessary for management itself to know the techniques, any more than it is necessary for an educated man to be able to cite and prove all the laws of physics in order to have a general understanding of physical laws, and how they operate.

Operations research involves mathematics, in the simplest and most direct statement, in that it attempts to translate a given set of real conditions into abstract mathematical terms. It seeks to find the chain of cause and effect in various problems faced by business, and represent these symbolically. The symbols representing real conditions, real events, real processes, can then be put in a relation to each other which simulates the relation existing between these conditions, events, and processes in reality. Because the symbols are simplifications, the effect of each real event, or change, or process, on every other being considered can be seen and grasped more easily. As symbols, they can be manipulated, to see what the outcome would be if changes were to occur in the realities they represent. And as mathematical symbols, they can be employed in various mathematical techniques to learn the most probable results of various kinds of action.

Symbols, moreover, beside the advantages inherent in reducing a great number of factors, whose relationship to each other is difficult to grasp, into a mathematical pattern, allow a business to trace a whole course of action representing, say, building of plant facilities, marketing of a new product, and final profit or loss statement on that product, without any real move ever being made. The entire history of the new product is worked out before the product exists.

And, often enough, once that history has been traced, the product never does come into existence. The company would have lost money on it.

Operations research, in other words, involves construction of a mathematical model—a model on paper—of an entire sequence of events.

To draw a graphic, if not exact, analogy, the mathematical model used in operations research is to the reality of a business situation exactly what a formula in physics is to the action in physics which it describes. By observation, and testing, various physical formulae have been devised. Once proved, these formulae can be used to predict

The new techniques are tools, aiding the businessman to transform an enormous amount of individual data into a formal, simplified pattern which gives each item of information its correct relative importance

what will occur under given physical circumstances.

Operations research follows exactly the same principles. First observation seeks to discover a chain of cause and effect. This chain is then represented in a mathematical model, equivalent to the formula of physics. By use of this model, various predictions can be made with a great deal of certainty, sometimes with absolute certainty.

A model can be quite simple mathematically and still be effective, provided its approximations of real data are valid and the factors used are significant. The simpler the model is, as a rule, the less precise will be the results, but precision of results is not always mandatory. Thus, a chemical company in Baltimore, American Alcolac Co., uses a simple formula to determine whether to engage in the manufacture of any suggested new product. It has assembled the major factors—the variables—that it believes affect a new product in its field. These variables are each assigned a value depending on the best estimates (and no effort is made to make these estimates precise down to the penny) of the departments concerned with the particular factor—production, sales, etc. All these variables are multiplied, and their product is divided by the estimated total cost of producing, introducing, and marketing the product. The quotient is the key as to whether the product will be made by the company—the higher the quotient, the better the profit that can be made from the product.

Now, basically, this process, simple and mathematically feasible as it is for anyone who has had high school algebra, still represents construction of a mathematical model to aid in a management decision — a mathematical model representing a whole series of possible future events. The results shown by that model determine whether the events represented will ever actually take place.

At the same time, the use of the formula represents a formal and more precise version of the instinctive thought process which every management goes through when any new project is being considered. No responsible management undertakes any major project, be it system revision, or introduction of a new product, without attempting to foresee the results, and without attempting to take into consideration all conceivable results. In the past, this has been done by a combination of the best estimates possible, intuition, research on some particular factors where research seemed feasible—the size of the market for a new product, for example, and the number of competitors already in that market—and then more intuition. From this potpourri of facts, guesses, hopes, and moods, management would make its decision.

The mathematical model attempts to resolve this into a series of symbols, based on the best facts available, which will show the probable results of an action or a whole range of possible actions—before *any* of them is taken.

Let's go back to the Alcolac Company, and the simple formula which it has evolved to decide whether to make a particular product. According to *Business Week* (March 31, 1956) the company was recently thinking of introducing what seemed to be a good prospective product. First, however, the mathematical formula was applied to aid management in deciding whether the product had a good

enough profit potential to make its introduction wise.

The product was a commercial laundry detergent. First was the question: could the product be made in suitable form for commercial distribution? The product research director estimated that chances of achieving this were between 80 and 100 percent. Striking an average, the technical feasibility of making the product was rated at 0.9.

Sales were the next criterion. The sales manager was called on to give his estimate of chances of establishing the detergent on the market. Basing his estimates on the customers available, and market conditions generally, he gave the figure of 60 percent as his best estimate of the chances of commercial success. The second factor in the equation was entered—0.6. The sales manager estimated also that, if the product were to be made and marketed, approximately three million pounds a year could be sold at eighteen cents a pound. Cost to manufacture the product was estimated at thirteen cents a pound, and probable life of the product at the estimated sales level at three years.

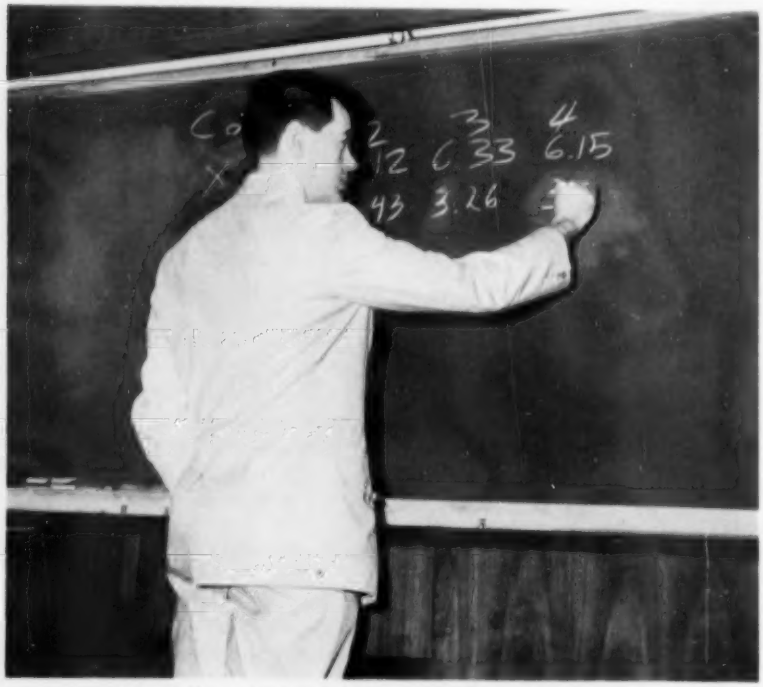
These were the variable factors—the factors based on specific department estimates that went into the Alcolac equation. The total cost of producing the detergent and establishing it on the market was divided into the product of these factors. Production costs were estimated as $20,000 for research, $40,000 for market development, $40,000 for engineering and pilot plant work.

Thus, as positive factors for the introduction of the product, Alcolac had these figures:

0.9 x 0.6 x 3,000,000 x (.18 — .13) x $\sqrt{3}$ (The square root of 3 is 1.732.)

This figure, divided by total costs of manufacturing and introducing the product, $100,000, gave a figure that represented the profit potential in the new product—1.4. In the company's experience this quotient is too low to be promising; the new detergent was dropped.

This formula worked out by Alcolac is a mathematical model (for its particular operations) which gives the company an estimate, and it feels a fairly accurate one, of the chances of making a profit on introduction of a given item. Notice that many of the figures that go into the formula are themselves rough approximations—for example the research director's estimate that chances of successful production of the product lie somewhere between 80 and 100 per cent. Yet, rough as some of these figures are, they are no rougher than other figures that management has based major decisions on, and here they are put in a meaningful relationship to each other so that a general major decision can be made intelligently.



Technically trained people are essential on the O.R. team

This is the simplest possible illustration of a mathematical model, but it is a perfectly valid one. Most models are considerably more complicated, and obviously, the greater the demand for precision in the final answer, the more involved the model must be. Thus, in the example above, the number of variables was reduced to major factors (although in estimating the actual figures used in the solution of the equation each of the departments concerned obviously had to take into account another set of factors or variables in preparing its estimate of product feasibility, sales market, etc.). But if a model is expected to give more precise results, the number of variable factors must be increased. The more the number of variable factors is increased, the more complicated become the models.

Model held to essentials

Thus, one of the first steps in constructing a mathematical model is to determine first the degree of precision required of the answers the model will give, and then to limit the model to the minimum number of essential factors that must be considered to give this degree of precision.

Theoretically, there are as many different kinds of models possible as there are different general business problems and situations. The most difficult problem in the whole process, of course, is the research which establishes the meaningful realities to be symbolized in the model, and the construction of the model itself. The latter will, except in the very simplest mathematical representations of reality, require the services of a mathematician—or at least someone with very extensive mathematical training. But the mathematician cannot know the significance of the various factors he is to symbolize without knowledge of the business. This is where the business executive plays his most important role in the process—in interpreting to the mathematician the business problems which the model is to solve, and the significance of each of the factors that must be considered in those problems.

We have, then, after executive and mathematician have together created a model, what is, in effect, a formula. It is usable in the same fashion as every other formula. By substituting the right figures for any given situation in the right places in the formula, we get our answers. (*To page* 71)

Final event of conference was Annual Luncheon at Benjamin Franklin Hotel.

Scientific methods replacing "intuition," NOMA conference hears

More than 1100 attend 37th Annual Conference in Philadelphia; forms, personnel, integrated data processing covered during crowded program sessions—

PROBLEMS once solved by intuition, experience and judgment—or plain guesses—are increasingly being handled by exact analysis, as the methods of science are brought to bear on management responsibilities, Morris B. Pendleton, told over 1100 members of the National Office Management Association at the keynote session of NOMA's 37th Annual Conference, held in Philadelphia at the end of May.

The keynote speaker predicted that the mathematical approach to solution of all management problems would become as commonly accepted in the office in the near future as double entry bookkeeping has been in the past.

Pendleton suggested in his opening talk that each NOMA member ask himself several questions concerning his activities as a basis for evaluation of his usefulness as an office administrator:

"How many magazines in your field do you regularly read, then mention significant articles to others?

"How many office equipment shows within 500 miles of your headquarters have you attended in the past year?

"Have you taken any university or other extension courses in the past twelve months?

"How often do you let a week go by without visiting other companies and discussing office management with your peers?

"How often have you let a week go by without talking to an equipment manufacturer whose products might fit into your company?

"Have you asked your budget official for enough equipment and the privilege of making your own recommendations, rather than letting somebody decide for you what you should be deciding yourself?

"Have you sat down with the various executives for whom you are making reports, to see how many reports could be eliminated or improved?

"Is your knowledge of your business adequate and comprehensive? Do you know all there is to know about the activities that you can possibly find out?

"Do you let a week go by without

Frank Knox's talk on forms control drew so many it had to be repeated

offering a constructive suggestion or idea to one of your top officers?

"Have you taken an active part in forming an Operations Research activity in your own company?"

The keynote session was held on Monday morning, May 21, immediately preceding the election of new NOMA international officers. Those elected to office were:

President, Floyd Guillot, Treasurer and Director, Industrial Finance and Thrift Co., New Orleans, La.; first vice president, F. G. MacIlroy, Western Division Manager, SoundScriber Corp., San Francisco, Cal.; vice presidents, R. B. Hodges, Planning Division Manager, Dennison Mfg. Co., Framingham, Mass.; J. R. Taylor, Head, Dept. of General Business, School of Business Administration, Wayne University, Detroit; L. M. Collins, Manager, Educational Services Division, IBM Corp., New York; and F. A. Schulz, Assistant Secretary, Unity Life and Accident Insurance Association, Syracuse, N. Y.

New directors elected were: Area 1, J. Greenwood, Personnel Secretary. Massachusetts Mutual Life Insurance Co., Springfield, Mass.; Area 2, A. E. Riddle, General Office Manager, Colgate-Palmolive Co., New York, N. Y.; Area 3, R. F. Hamer, Office Services Manager, New Holland Machine Division, Sperry Rand Corp., New Holland, Pa.; Area 4, T. C. Yeaman, Division Auditor of Receipts, Chesapeake & Potomac Telephone Co. of Virginia, Richmond, Va.; Area 5, J. H. Jackson, Manager, Inventory Administration, Canadian Westinghouse Co., Ltd., Hamilton, Ontario; Area 6, M. A. Sherman, Manager, Methods, Procedures and Training Dept., Citizen's Mutual Automobile Insurance Co., Howell, Michigan; Area 8, J. H. Quaritius, Administrative Vice President, Peninsular Life Insurance Co., Jacksonville, Fla.; Area 10, A. G. Bagwell, Treasurer and Director, Union National Life Insurance Co., Baton Rouge, La.; Area 12, Irene D. Kriedberg, Branch Office Manager, Remington Rand Division, Sperry Rand Corp., Minneapolis, Minn.

I.D.P. shown via television

Following the keynote session and election of officers, the afternoon session on Monday, the first day of conference business sessions, was given over to presentation of a closed circuit television presentation of various machines employed in integrated data processing. The television presentation was made in Philadelphia's Convention Hall, scene of the annual NOMA equipment exposition, which was held concurrently with the NOMA conference.

On Tuesday morning, the crowded conference schedule was broken down into four simultaneous sessions, all held in the conference headquarters, Philadelphia's Benjamin Franklin Hotel. Two of the early morning sessions dealt with electronic applications in large organizations and in small organizations, the other two covered forms control and supervisory problems in the office. These latter discussions continued throughout the morning, but the talks on electronics were succeeded by talks on Personal Self Improvement, and Personnel-General.

The two-part session on supervisory problems in the office, was covered by John F. Shafer, manager of the Supervisors' Development Program, Metropolitan Life Insurance Company, New York.

The first part of the session was devoted mainly to explanation of the planning that has gone into a series of film strips dealing with supervisory problems that have been developed by NOMA in cooperation with the McGraw-Hill Publishing Co., The speaker said that most film strips produced in the past have dealt with industrial rather than office situations, and have been unrealistic in terms of office supervisory problems. For this reason, Shafer said, the NOMA series, dealing with strictly office situations, was created.

One of the film-strips in the new NOMA series, "Motivating Long Service Employees" was then shown. The strip, based on an actual case history, detailed the results of a supervisor's softening his policy of giving commendations only for outstanding work, and keeping communications

Ground was broken in Philadelphia during conference for new model office "home" of NOMA

NOMA's new officers: 1st row (l. to r.) R. F. Prinz; J. R. Taylor; F. G. MacIlroy; Floyd Guillot; F. A. Schultz; W. H. Evans; L. M. Collins; R. B. Hodges; 2nd row (l. to r.) J. Greenwood; J. H. Jackson; E. L. Hamilton; Emma Lee; R. F. Hamer; T. C. Yeaman; J. C. Quaritius; A. G. Bagwell; 3rd row (l. to r.) A. E. Riddle; J. C. Hodges; Irene Kriedberg; D. B. Southern; T. H. Gloyer; M. A. Sherman.

lines with his employees on a formal, rigid, written basis.

"The case history turned out very well in this instance," Shafer said in commenting on the episode on which the film was based. "I merely suggest that particularly with the senior employee of this description the psychological satisfaction of close verbal communication with the management group of the division, of the section, is of extreme importance in many instances; where it is withheld the 'forgotten man' complex can readily occur, the feeling that 'I'm just a wheelhorse around here'."

Part two of the morning discussion of supervisory problems in the office was concentrated on "Combating Job Monotony." Again, a film strip from the new NOMA series was shown, pointing out the frustration felt by an above-average employee trapped in a repetitive and unstimulating job.

Shafer conceded that this was an example of a problem that could not be solved by a line supervisor on his own, but pointed out that every line supervisor should be aware of the danger of such a situation. As an example of what a company could do to ease the problem, he cited the experience of a New York bank which, during war time, found that many of its most intelligent new feminine employees (the bank used a rating system to determine the capabilities of employees) were quitting low level jobs to take positions with smaller offices. Determined to find out why, the bank surveyed the separated employees to learn their reasons for quitting. Almost all who replied cited job monotony, and the difficulty of advancing from repetitive jobs because of the bank's policy of promotion by seniority.

The bank, in an effort to solve the problem, called in an industrial psychologist, the speaker declared.

"He, first of all, said monotony on the lower job level usually is traceable to a feeling of a lack of accomplishment," Shafer continued. "He said people work better, work with a greater sense of accomplishment if they have a real understanding of the end results of the work of which they are a part.

Communications block existed

"He thought there must be some deficiency in communicating to the girls on these lower level jobs the end results of the work they were doing, so he cooked up a four point work communication program that all supervisors at the bank from the president down to the newest team head were asked to fulfill. When the thing is presented, it seems to be obvious enough that this should have been done originally."

The four points of the program suggested by the psychologist were:

"In your job as a supervisor, don't do anything that would discourage people you supervise from asking questions about the nature and purpose of the work of your unit, the work of your section.

"The second point: Mr. Unit Manager, Miss Team Head, when an unusual work assignment comes along and you hand it out for actual performance, don't merely say what is to be done, when it's to be done, by whom it should be done, and that's all. Explain why it's to be done, explain the nature and the background of unusual work assignments unless for some special reason it simply isn't feasible to do so.

"The third point in that communications program was really an extension of the first, but it is stated in a positive way instead of a negative way. It said, take the initiative, try to find a chance from time to time to tell the people you supervise interesting things about the nature and purpose of the work of your unit, and try to make the telling somewhat interesting.

"The fourth point in that communications program was simply an overall concept: Try to humanize our work here. Tell people, show people whenever the chance arrives what the work they do means finally to other people, on the assumption that most of us have some degree of social consciousness and feel more useful and constructive if we know that the work we are doing serves a final result involving some human relationship."

The program as outlined didn't work at first, Shafer said, because such a communications block had been built up over the years between middle management and the first line supervisory group, who were mainly women, that the supervisors themselves didn't know the entire work story—the way in which the work of their group fitted into the overall objectives of the bank. Until this block

(*To page* 77)

Physical science methods, social science knowledge stressed by AMA

Companies will be forced to make exact operating plans fifteen to twenty years ahead as modern economic pace increases, General Management meeting speaker predicts—

INCREASED dependence on solving business problems by methods and techniques borrowed primarily from the physical sciences, and increased emphasis too on knowledge taken from the social sciences will characterize business management increasingly during the next several decades, speakers declared at the American Management Association's May General Management conference in New York.

More than one thousand top management executives attending the conference were also told that within a relatively short time most major companies will be forced to plan their activities much farther ahead in the future than they ever have before—as much as fifteen or twenty years ahead.

A true "science of management" is possible, Dr. Mason Haire, associate professor of psychology, University of California, told the opening day audience on Wednesday, May 23, and will be achieved in the near future, even though today's "textbooks on business organization are full of old wives' tales, unverified empirically and unconnected theoretically."

"We rely on rough and often erroneous generalizations, Dr. Haire continued. "We have to use these generalizations to make important decisions, so it is important to have good ones. I suggest that what we need to get better ones is to get better facts. To get better facts, we need to ask better questions. Better questions will only flow from better theory."

Though the social sciences have not as yet contributed as much as is desirable to business organization, they will play an increasingly influential role in business in the future, he predicted, even though many businessmen will resist "this kind of intrusion and poking about as they resisted the economists forty years ago."

Among questions which social science will play a role in answering are the proper structures for companies of various sizes, the speaker indicated, although no one knows at the present time whether there is any universal

law or force determining the relationship between a company's size and its ideal organization structure.

Organization within the company was also emphasized by another Wednesday speaker, Dr. Alex W. Rathe, associate professor of management engineering, New York University, who spoke at an afternoon panel discussion of "company structure and the individual." Pointing out that the organization of a company actually represents a complex of human forces, rather than an inanimate structure, Rathe said that the contribution of each individual within that organization should be evaluated primarily in terms of its effect on the company as a whole, rather than his particular area of the company.

This means that it is management's responsibility to see that people work effectively, to get things done through others, the speaker said. Thus, one of the key tasks of every executive is his assignment of specific work areas to specific people. Four crucial considerations that should be borne in mind by the individual executive in meshing personnel and work for maximum effectiveness, he said, are:

The process of delegation. "If the burden becomes too great for one man, he carves up his work and distributes it. The problem is how to do this so that the pieces can be put together again readily."

Assignment of responsibility. "Delegation of work is a mandate to the subordinate who assumes the obligation not just to get the work done but to reach his objective in the best possible way. Delegation has its moral aspects, too. Unless we give a man a responsibility, he cannot act responsibly."

Anatomy of organization. "Organization is more than the mechanistic structuring of the business; it is a living organism. Like any managerial problem, organization always has two aspects, technical and social. Organization is a fabric of the tasks and the people who perform them. Whether the texture stands up becomes known only when it is used."

Dynamic aspects of organization. "The real value of an organization to management becomes apparent only in the crucibles of business operations. Like any structure, the static organizational set-up gets its acid test when things move, that is, in action. It is difficult to show action in a snapshot—an organization chart; we need a film strip. These are the dynamic aspects of organization which have been too often overlooked and are still to be explored."

Precise planning vital

Planning company operations far into the future is becoming more important today, and will become increasingly important in the future, Robert H. Bridges, secretary, committee on planning, Cleveland Electric Illuminating Company, said at the morning session on Thursday, the second day of the conference. This is true, he continued, because production equipment is becoming so expensive that one wrong buying decision can wreck a company, and, simultaneously, competition is becoming more intensive, and technological improvements are coming at a record rate. The entire pace and cost of business is rising, in other words.

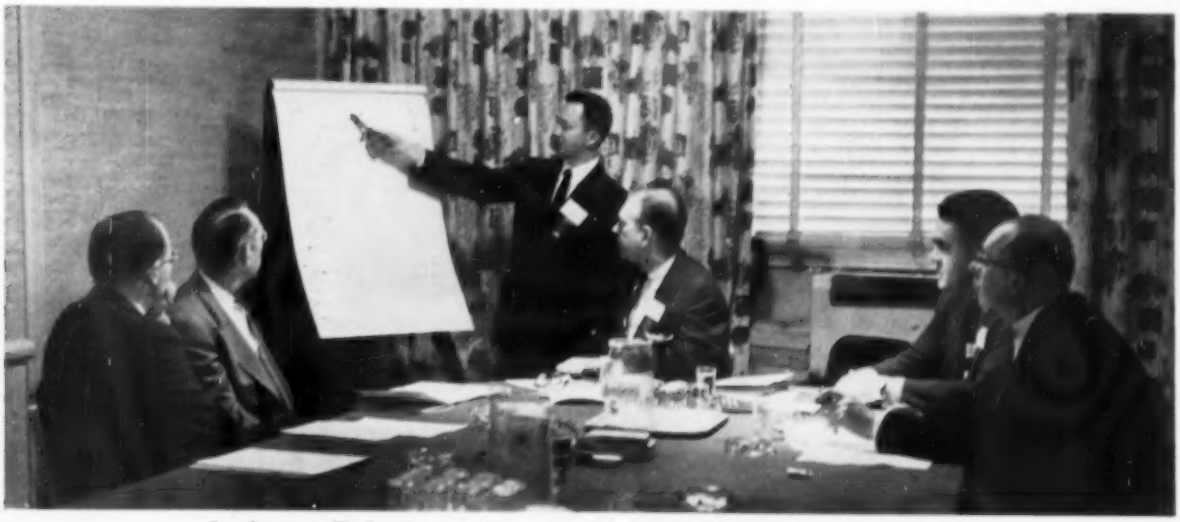
Moreover, he said, long range planning and objectives must be exact rather than generalized, to prevent wrong decisions. (*To page 66*)

Quotes—

"We shall have more specialties and more specialists in business. The problem is to provide for those who integrate the specialists, those who can use the special knowledge and skills of the specialists without having them themselves." ***Dr. Stanley F. Teele, Harvard University.***

"Organization is more than the mechanistic structuring of the business; it is a living organism . . . a fabric of the tasks and the people who perform them." ***Dr. Alex W. Rathe, New York University.***

"Research demonstrates that present management systems produce sufficiently strong hostile reaction among employees to restrict production appreciably." ***Dr. Rensis Likert, Institute for Social Research.***



Speakers on Wednesday afternoon panel hold last-minute review of presentation

Supervisors can tell our fortunes

They can, that is, provided the trend toward freezing their initiative by rigid rules is tempered, and management recalls that worker calibre still controls output—

by W. E. Dewey
Management Consultant, Arlington, Va.

BEING controlled by budgets, production standards, equipment lists, supply allotments, work measurement and cost controls is no laughing matter to first line supervisors and workers.

Being controlled is no joke, period. This is especially true of controls and standards that supervisors feel are superimposed on them. Maybe we can do a few things to train and inspire supervisors to develop their own self controls and standards. If we can, they will tell our fortunes—our good fortunes that is.

The increase in specialization, size and complexity of business enterprises has resulted in an increasing number of controls and standards. Some of these controls and standards are necessary and some of them are effective. Whether or not they are necessary and effective, they have, to a degree, overwhelmed supervisors with records, reports, statistics and paper work.

The need for and development of controls and standards and the use of cost accounting, work measurement, production standards and man hour work load ratio formulae have consumed much time and energy, not only on the part of work measurement, cost control and production standards experts, but on the part of supervisors and workers. Recording what was done, in some cases, has consumed as much as 20 per cent of the employee's time. When employees are recording what they have done, they are not producing goods or services.

More important, however, is the fact that we, to an extent at least, have become so control and so standard production minded and so intrigued by what the electronic computers roll out for us and so impressed by the tables of figures and the coefficients of correlation that we have forgotten:

> Self imposed standards come from within a person; they are positive in nature; they inspire high endeavor; they result in lasting improvement and morale.

Our extensive efforts to develop controls and standards and our enthusiasm for them seem to have blinded us to their limitations. We seem to have forgotten that these controls and standards are all superimposed standards. They are the kind that:

> Appeal to fear and to penalty, that, regardless of how statistically correct they may be, are in a real sense negative in nature and are complied with reluctantly, rather than cooperatively and enthusiastically.

There is no intent here to make a case against controls and standards based on work measurement, cost control and statistical methods. This is an attempt, however, to reemphasize the importance and value of the standards and controls that supervisors and workers impose on themselves.

We know that "that government is best that governs least." We know that self control in any group lessens the need for laws and regulations. We know that the greater the number of workers and supervisors who create and live by their own controls and standards, the less the need for controls and standards set by others.

Let's take a look, under the microscope, so to speak, at a first line supervisor who sets a standard of production for his own little group of nine employees. By this close look we will be able to see many of the problems, as well as the values, that come when standards are set right at the grass roots, down in the small organizational units, down at the desks, benches, and the individual employee's work area. We will see, in this case at least, a comparison of the values in production increase and in improved morale that comes from self-imposed standards as compared to superimposed standards.

Dick Bryant supervised a supply activity. It was his job and that of his nine clerks to check line items on supply requisitions to insure that the stock numbers, names and catalog number were correct and were all in agreement. When any of the three elements in the line items were incorrect or there was a lack of agreement in them, they were given to a stock chaser in another unit to correct the errors. The line items which were correct and in agreement were sent forward to be filled.

Dick, also, was behind on his work although his workers were meeting the production standard of 10 minutes per line item. This backlog was a source of irritation to those needing supplies.

Dick decided to check several hundred line items himself to see if he could set a better standard for a line item. Dick found he could check a line item in 1.5 minutes.

Dick was a very good checker himself and since he knew that standards cannot be based on what the best worker can do and since he was aware of the safe work load principle, he set the standard at 2.5 minutes per line item.

We note here that Dick's standard of 2.5 minutes was considerably lower than the 10 minute standard per line item set by the work measurement experts using the statistical analysis of past performance method.

Shortly after Dick set the standard of 2.5 minutes per line item he gave each worker several requisitions to

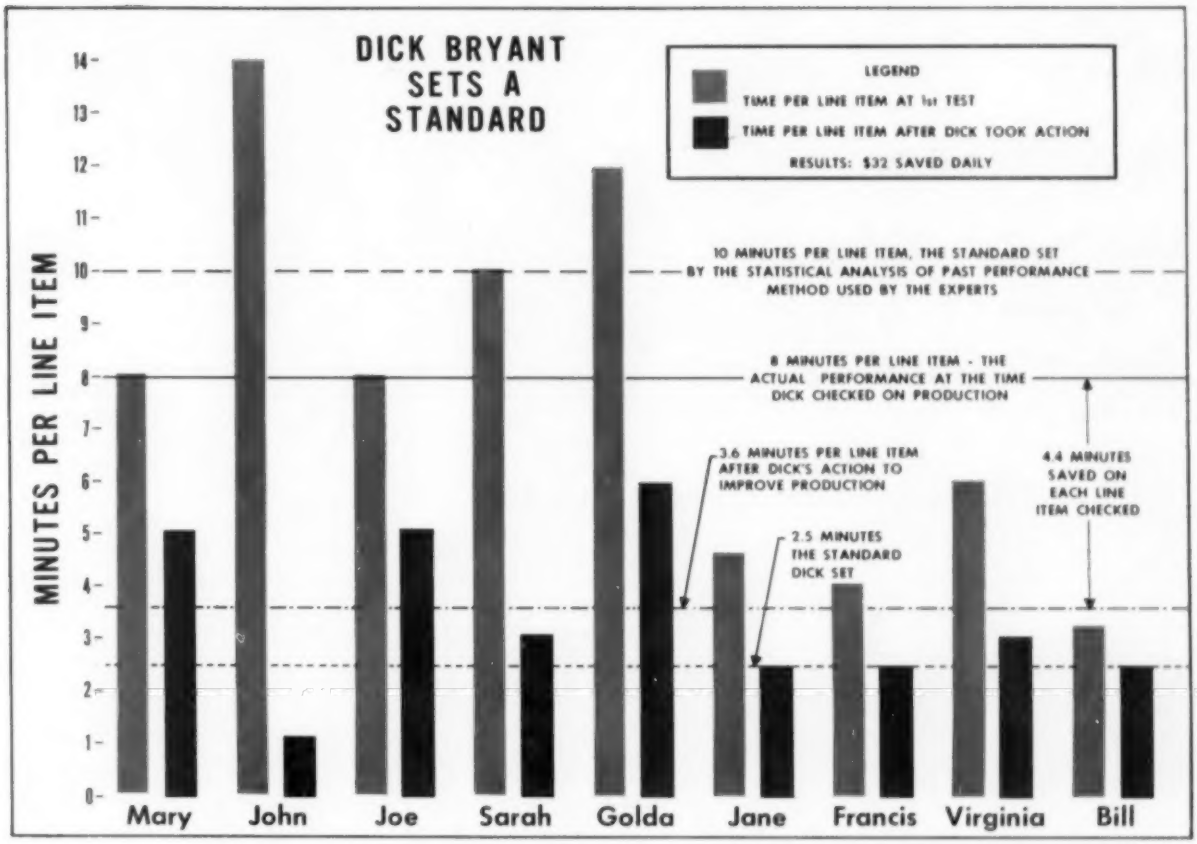


Chart shows results of supervisor's action in terms of individual worker performance.

check. Each employee checked these requisitions under normal working conditions. Dick felt that there is always some artificiality in production time when workers are aware of the fact that they are being checked. Sometimes they exceed the production rates to make a showing. Sometimes they take more time to produce than they use in the normal situation.

Dick compiled the production records of each of his nine operators. He then took action to bring those operators who were below up to the standard.

In order to understand the details involved in Dick's action we need to analyze the chart which appears above.

The figures on the left of the chart are the minutes required by each clerk to check a line item.

The first clerk, Mary, is an elderly lady. She wears thick lenses in her glasses. The next clerk, John, is smart, alert and shy. Joe, the next clerk, isn't too bright. Sarah is a middle aged capable worker. Golda is young, pretty, and her dress fits too tightly in all the right places. Jane and Frances are young mothers and capable. Virginia and Bill are the oldest in the group and both are resentful that Dick was made supervisor. Bill is extremely resentful.

How production was increased

Let's look at Mary, John, Joe and Golda again because they are special problems. Their production record on the chart shows that.

The colored bar above each clerk shows the minutes it took each operator to check a line item; Mary 8, John 14, Joe 8, and so on. The black bar shows the production of each worker after Dick had taken action to bring each clerk up to or down to the 2.5 minute standard.

The solid line, the 8 minute line, is the average before Dick took any action. The Dash-Dot line, the 3.6 minute line, shows the average of the group after Dick had taken action to improve the productivity of the individuals in the group. We see by the figures on the chart that Dick saved 4.4 minutes per line item: an equivalent of $32.00 per day for the group as a whole.

Now let's review some of the action Dick took to improve production.

Dick found, when he was setting his 2.5 minute standard, that he had to go to a central table for certain catalogs and reference books. Sometimes he found some other clerk had the reference he wanted. Dick concluded that a complete set of references would help to reduce the 8 minute average he was working to reduce to his 2.5 minute standard. He was able to obtain complete references for all operators. This helped *every clerk* to reduce his production time.

Let's look again at the descriptions of Mary, John, Joe and Golda and review some of the details concerning each of them.

Mary had a sight difficulty. Since checking required focusing and refocusing her eyes she couldn't reach the 2.5 minute standard. The best she could do was 5 minutes. Dick couldn't do much about her eyes. The doctors had

(*To page* 36)

Conclusion:

Seven sacred cows of clerical routine — do we need them?

Fallacies in traditional personnel and quality control paperwork, overdependence on common sense and files were cited last month. Here are the last three sacred cows—

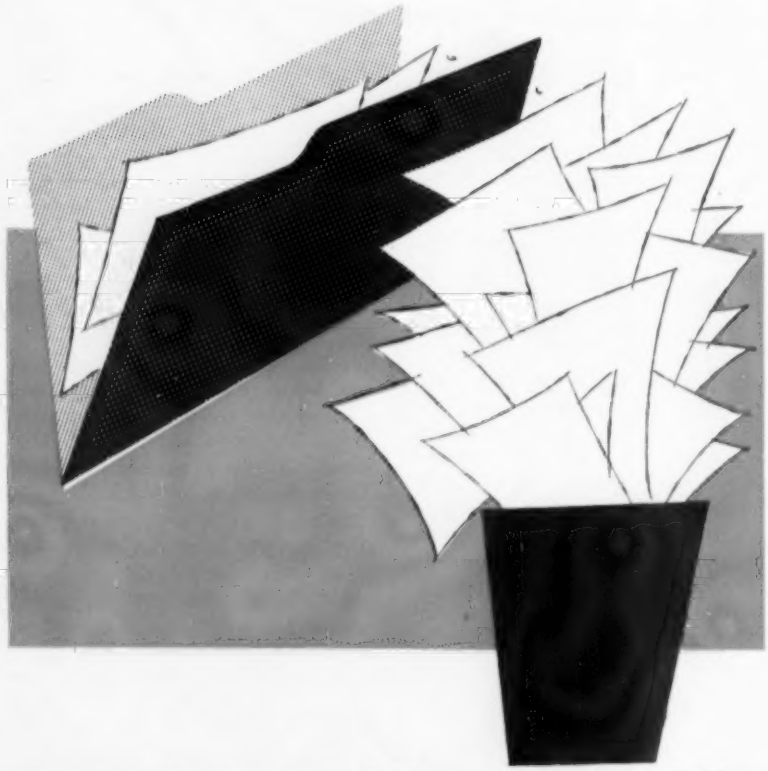
by Arthur Barcan
Executive Director, Records Management Institute, New York

FILING and Paperwork. Staying on the subject of folders, filing and "sacred cows", what ever happened to our favorite debate on centralization versus decentralization of filing? It was a nice subject which we could always debate heatedly or straddle diplomatically. It belonged in an ordered universe, along with the master kitchen in women's magazines, where everything has a place and there is a place for everything. A file, therefore, could either be centralized in one location or decentralized among the various offices.

The nice thing about decentralization of files is that it is a euphemism for abdication of authority. It is a nicer way of saying that we turn over the letter to our secretary and hope she can find it when we call for it. Of course, along with our more complicated life, came organizations like Lever Bros. to talk about decentralized files with centralized control. Now that hampers the classic debate, because you can "have the cake" of files readily accessible and still "eat it" by setting up basic standards of categories and classifications.

What really is upsetting the applecart, though, is a new concept of "mobile files". In lay terms, it would not fix the location of a file for keeps —but rather move the file as the work and reference demanded. Along with substituting flexible possibilities for a good old "school solution", it just about ends our centralization vs. decentralization themes. It is rather disheartening to contemplate, for example, that an engineering contract file would not have a permanent home at all times—but rather that it would move from sales to planning to production engineering as a basic unit. Sure, it would provide for the first time for all the pertinent papers being available to those who need them and it would always locate the file with the person or group currently responsible for it. It is, however, disconcerting not to be able to leave vestigial groups of contract papers and folders among the various departments —even for sentiment, if for nothing else.

The more you think of it,, the more the mobile files could be translated into case work, personnel, and project operations where many staff people may contribute to a more effective job and where it is to everybody's advantage to know what has been done thus far on this item throughout the organization. This could be the death knell of the good old days, the good old debates, and the good old segmented or duplicate files. The old order sure can "changeth".



Management gets some reports it asked for, some reports it once asked for and forgot to stop, and some reports "that have always been prepared"

6. *Reporting and Paperwork.* Here is an era to warm the cockles of a

How can "common sense" alone be a reliable guide to picking one piece of equipment for the specific needs of one company?

man's heart—or at least the heart of a man paying proper homage to a well-entrenched sacred cow. Reporting is a good way to reflect not only the company's personality—but everybody's personality. That is the nice part about reporting—every one is in the act. Top management gets some reports it has asked for, some reports it once asked for and forgot to stop, and some reports that "have always been prepared". By the same stoken, as the company grows, each section, department and division head starts putting a lot of statistics and comments on paper. In sophisticated circles, this is "communication". In office politics, this is the "pipeline" to insure that each person is getting across his story on his operation just as far up the line as possible. In dollars and cents, this is a large overhead cost that usually grows by default, expands with ambition, and continues with inertia.

The nicest part about most reports is that they tell some kind of a story without putting anybody on the spot. For example, long lists of items shipped, received, produced or transferred are informative, but are not harmful since there is usually no indication as to whether the amounts are high, low or average. Comparison with last month's or last year's figures are also informative. There are variations—sometimes even with a plus or minus sign and in percentages. However, as long as the report does not readily indicate how much variation is healthy or dangerous and how much is a trend or a one-shot change, the report can stimulate all kinds of phone calls, meetings and abortive action until the matter is clarified.

The distribution of reports is equally satisfying. Since the introduction of carbon paper and duplicating processes, it is always a matter of prestige to see that you get on all the distribution lists that rate and a matter of courtesy for the preparer of the report to go along with such requests. Every once in a while, some eager beaver will attempt to cut down his list by sending out a questionnaire on who really needs this report. Without fail, the resultant list usually ends up longer than ever: someone who was not on it before suddenly discovers the oversight and demands corrective action.

There are new objective techniques by which one can evaluate in a matter of days just how healthy a reporting system is—how much duplication, how many gaps in information, etc. There are even new effective professional techniques to develop reporting in terms of objective needs at all levels of management—and to accomplish same within a matter of days or short weeks. This, however, would take all the fun out of reporting—it would end all the "personality memos", the courtesy lists, the guesswork on how many and how much for reporting—and all that would be left would be highlighting pertinent data to those who need it.

7. *Cost and Paperwork.* The nicest part about paperwork operations is that hardly any one attempts to introduce science into an "art". In companies, where factory production costs are computed down to each nut and bolt, it is an art to be able to do without even summary figures on what the total paperwork costs are. It certainly would be downright confining to have to know what it costs to produce an invoice, return an order, or hire and fire an employee. As a matter of fact, it is a positive convenience at cost-reduction time. After all, it is always nice to talk about cutting costs and even percentages of cost when we do not know what these total paperwork costs really are. The latter are so conveniently lumped into miscellaneous overhead expenses that it becomes a discouraging task to separate them. The only time we break down, post and process costs is for such items as labor and material—which we do with great conscientiousness and deliberation, only to turn the data into summary costs—then used as generalized standards and rates.

What we do not know cannot hurt

(To page 66)

President's office follows traditional pattern

The building after conversion

Yesterday—a luxury hotel; today—a striking new office

Philadelphia's former Ritz-Carlton becomes new home of Pennsylvania Lumbermen's Mutual Insurance; unorthodox use of brilliant colors distinguishes new offices—

THE LEGENDARY Ritz-Carlton Hotels, long synonymous with the utmost in luxury, have been the source of at least one English word, and play a role in the title of one of America's most famous short stories. Europe had the first Ritz-Carltons—in London and Paris. Others arose in the wealthy cities of this country and Canada—New York, Montreal, Boston, Philadelphia.

Color, light shorten long corridor

Low partitions feature wood and glass panels, formica swinging doors in color

Most have survived, and are still leading hotels in their cities—centers of the gayest social events of the year, a mecca for visiting celebrities. But two of the famous line have been casualties of the ever-expanding business centers of their respective cities. New York's original Ritz-Carlton was torn down a few years ago, and replaced by an office building (although a new resi-

Panelled walls in private office are actually movable storage units

Library is popular at break time . . .

. . . as is kitchen and refreshment room

(Left) Office of treasurer, Robert Platzer. (Right) Designer Wanda Norstrom checked each phase of interior construction

Sound and air conditioning, bright colors make machine room pleasant

dential hotel version was built farther uptown). Philadelphia's example also ran into trouble. Built in 1912, it was proving economically unsound during the early fifties.

But the Philadelphia owners adopted a different solution from that found in New York. They consulted the Philadelphia architectural firm of Thalheimer and Weitz, which has long specialized in remodeling and rehabilitating existing buildings. The architects' studies showed that the building could be completely rehabilitated, for considerably less than the cost of constructing a new building. Moreover, the rehabilitation could increase the building's usable floor space exactly fifty per cent if two interior light courts were floored, two of the building's large, high ceilinged public floors were divided to form intermediate floors, and four more floors were added on top of the structure.

All this could be achieved by modernization of the existing building. On the other hand razing the existing building, and constructing a new one would make it necessary to erect a much taller structure to gain the same interior space, since zoning laws required setbacks for the upper stories of new construction.

Therefore, the architects recommended that the old 12-floor hotel be converted to a 17-story office building.

The conversion problems, of course, were immense, even beyond the creation of new intermediate floors, and the addition of five more floors on top of the existing structure. The interior construction of a hotel is entirely different from that of an office building, as is the power load the building must be equipped to sustain. Thus, all interior rooms and baths, walls, closets, partitions, ceilings, elevators, pipe shafts, stacks and floors were ripped out—the inside of the building was torn down to the bare concrete slabs. Underfloor ducts to house power and telephone lines were installed in these slabs, and the hotel's light courts were floored to provide unbroken floors throughout.

The job done on the exterior of the building was equally drastic. The entire facade of the hotel from the first through the fifth floors was torn off—leaving only the structural steel. A new sheathing of Alabama limestone was then built on the structure.

Accent on color

While all this was going on, another story was taking place in a different part of Philadelphia. The Pennsylvania Lumbermen's Mutual Insurance Company was housed in a drab office in a run-down neighborhood. It had a new president, Fred H. Ludwig, who had two particular goals as far as his offices were concerned. He wanted new and more adequate office space, and he felt very strongly that the conventional color schemes in use in most offices were uninspiring and depressing.

The required new office space might be available in several different places. Downtown Philadelphia was—and is—undergoing an architectural renaissance. The entire Penn Center development was being created, and PLMI was debating seriously locating its new offices in that major development. But the hotel conversion was obviously going to make the new office building on the site of the old Ritz one of Philadelphia's most modern and attractive buildings, and the location, for the very reason that had handicapped the Ritz as a hotel—the encroachment of the business area—was perfect for an insurance company. The decision was made to take space in the "new" building. (*To page* 74)

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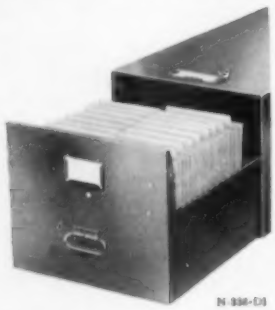

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Supervisors—

(*From page 29*)

done the best they could for her. In the type of work Mary was doing she certainly was handicapped.

John presents an interesting case. He was the worst clerk, 14 minutes per line item and then he became the best; 1 minute, less than half the 2.5 minute standard. John, although capable, had an extreme inferiority complex. He just would not go to the central table for reference if anyone else was there. He would not go get a reference if anyone else had it and had not returned it. When Dick obtained a complete set of references for John, he became the best producer.

Joe couldn't carry figures in his head. He would make eight or nine trips to check a 16 digit stock number. The best Joe could do was 5 minutes per line item. Dick Bryant couldn't do much about that inability. Joe was certainly mentally handicapped for such work.

Golda was neither mentally nor physically handicapped. In fact, she didn't want to work in a warehouse. All she wanted was "to circulate" more. The best she *would* do was 6 minutes per line item. Dick couldn't do much about this girl.

Dick found it necessary and did some on-the-job training for Jane and Frances which further improved their productivity. He found that Virginia had some bad work habits, which he tactfully corrected.

Overall productivity raised

In summary, we find that Dick improved the productivity of all workers by getting catalogues for all. He trained some and corrected work habits for others. He identified three workers, Mary, Joe and Golda, and improved their productivity slightly, but they still remained marginal employees for reasons beyond his control. He told our fortunes in a very real way, $32.00 worth a day.

It would be foolish to end the story here with the usual "and everybody lived happily ever after." Certainly we couldn't expect every other supervisor who directs offices like Dick's to get the moral of the story and do as Dick did. Next week or next month or next year maybe Dick can't make his present 3.6 standard. Next month or next year he might even lower the 2.5 standard he was shooting at.

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The fastest, cheapest, most versatile way to make masters for duplicating

For instance, if he transfers Mary or Joe and can obtain another John, Dick is on his 2.5 standard or under it. If he loses John and gets another Joe or Golda, his standard soars to 4 or 5 minutes per line item. If Dick had been unable to supply all workers with all references, the tools required, his productivity would be 6 minutes instead of 3.6. Dick's standard, we can conclude, is not here to stay. Neither is it going to improve continuously. It can go up as well as down. In many cases he can't stop adverse trends.

Now this is the reason. Dick's unit was manned with these particular people at this particular time for many and varied reasons. These were the employment processes: application, interview, appraisal, selection and assignment. The results from these processes seem grossly inadequate since three of the nine were bad selections. Yet the personnel people were limited by the number who applied and who were available at the time or near the time they were needed.

Calibre of workers vital

This factor of *obtainability* is one of the most important factors in manning for productivity, yet one of the most neglected by those concerned with productive output. It simply means that Dick, over the years, will not be able to improve significantly the quality of his workers. All we can ask of Dick is that he manage his group as best he can. In baseball language, it is his job to get the best performance out of the "material," the personnel, he has.

The quality in the nation's manpower is limited. We know that intelligence, the aptitudes such as mechanical, clerical, mathematical, and even the physical qualifications follow basically the normal curve of 7, 24, 38, 24 and 7 percent. That's all there is; there isn't any more. So we find Dick, with three poor hitters on his team. In theory, he can send them down to the minor leagues and he and the personnel department can replace them with good hitters. We know that it is impossible in baseball to man either major league, minor league, college or sandlot teams with more than two or three 300 hitters in a squad of twenty or twenty-five. The same is true of quality in football and basketball teams. Why? Because that's all there is; there isn't any more. Sure, at times one baseball club gets a few more good hitters

(*To page* 56)

THE DARN THING NEVER WEARS OUT

Even customers say the factory builds Comptometers too well—they don't wear out. Speed, efficiency and accuracy explain why the machine has earned so much business experience and office seniority. It's what they say it is—*the mightiest little workhorse in business.*

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- ☐ Please arrange a free office trial

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Other products: THE COMPTOGRAPH® CALCULATING-ADDING MACHINE and the COMPTOMETER® DICTATION MACHINE. Offices in principal cities and throughout the world

◀ Electric register
Moore Business Forms, Inc., 900 Buffalo Ave., Niagara Falls, N. Y., has brought out its new Electric Register with push-button control of forms handling, including automatic ejection of written form, filing of audit copy, and advancing next set into writing position. **(A-1)**

◀ Folding machine
Scoring, slitting, and perforating are possible with this folding machine, in addition to a variety of folds. This model is one of the new Embee line, introduced by the Davidson Corp., 29 Ryerson St., Brooklyn 5, N. Y. **(A-2)**

▶ Key drive calculator
This is the new Addicalco key-drive calculator, an Italian machine distributed in this country by Addicalco Corp. of America, 77 Chambers St., New York 7. Prices, $400 to $500. **(A-3)**

New for the office

◀ Stacking bin
Shown is one of two stacking bin units designed for use with Collamatic electric collators. Because they have been found useful in hand collating and other operations, they are now offered separately. The manufacturer is Collamatic, Wayne, N. J. **(A-4)**

▶ Floor machine
Clarke Sanding Machine Co., 30 E. Clay Ave., Muskegon, Mich., offers the new ClarkeAmatic self-propelled floor maintainer, in two sizes. It has twin brushes, push button and lever controls. **(A-5)**

▲ Portable transcribing unit
Thomas A. Edison, Inc., West Orange, N. J., has added this portable transcribing machine to its line of Voicewriters. Recording on vinyl disks, it is designed for the convenience of the secretary, and has easily operated controls. A carrying case can be provided. The new machine is available in a variety of colors, including blue, green, red, and grey. **(A-6)**

▲ Cafeteria cooler

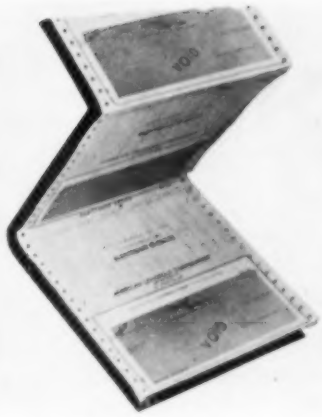
The Cafeteria cooler is now offered in capacities from 6 to 42 gallons per hour. Regardless of capacity, the size of the unit is limited to a counter height of 36 in., a width of 28-1/16 in., and a depth of 21-3/16 in. It has a coil-cooling system, rather than storage tanks. The manufacturer is the Sunroc Corp., Glen Riddle, Pa. **(B-1)**

▲ For tab card corrections

Self-sticking Correction Seals for sealing incorrectly punched holes in punched cards are offered by W. H. Brady Co., 727 W. Glendale Ave., Milwaukee 12. The seals are transparent, thin, and designed to stick without moistening. They register in the verifier as corrections. Seals come mounted on a dispenser card for one-at-a-time application, using a single motion. **(B-2)**

▼ Deodorizing ash tray

This Secretary-Saver is both an ash tray and deodorizing unit to kill the odors of cigarettes and cigars. The bottom section contains a gel made of odor counteracting chemicals. This is a product of Airkem, Inc., 241 E. 44th St., New York 17. **(B-3)**



▲ Automated checks

American Lithofold Corp., 500 Bittner St., St. Louis 15, has introduced "Electronic" Tab Card Checks on Lithostrip continuous forms. Checks are pre-punched and pre-numbered, can be prepared on automatic machines. **(B-4)**

▶ Machine cleaner

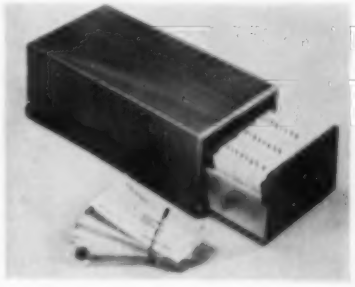
Sayfa Business Machines Cleaner is a new product of The Penetone Co., 74 Hudson Ave., Tenafly, N. J. It does not make use of carbon tetrachloride, and is designed to be safe, non-flammable, and easy to use. **(B-5)**

▶ Business card file

This Card Caddy has a designed capacity of 1,000 business cards. It is small (9 in. long), has hidden rubber legs and an aluminum drawer sliding in a silver-grey plastic case. La Jolla Industries, Inc., 4616 Santa Fe St., San Diego 9, Calif. **(B-6)**

▲ Portable typewriter

The Quiet-Riter is one of the two new models recently introduced by Remington Rand Div., Sperry Rand Corp., 315 Fourth Ave., New York 10. Like the new Office-riter, it has keys with four new characters: plus sign, equals sign, exclamation point, and numeral one. The machines are offered in several colors in addition to the standard grey. **(B-7)**

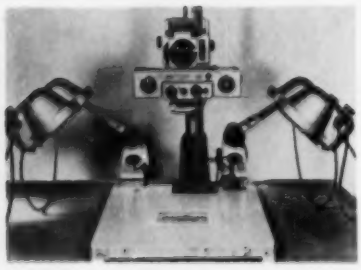


▲ Calculating device

The Controller is an aluminum scale-type calculating device intended for commercial and technical calculations. It is designed to be easy to use. It is offered by Silver Bells, Ltd., 3367 Fernside Blvd., Alameda, Calif. **(C-1)**

▼ Office typewriter

The new Pacemaker is designed for use in small offices, stores, etc. It is intended, according to its maker, "to fill the gap between portable typewriters and present-day office typewriters." Smith-Corona, Inc., Syracuse, N. Y. **(C-2)**



◗ Duplicating aid

This correction tape for covering errors on spirit masters is a new, thinner version of a tape made by the Avery Adhesive Label Corp., Monrovia, Calif. The tape is self-adhesive. **(C-3)**

▲ Accordion file

This accordion file is legal size, and it features a separate locked compartment. It is a new product of Jayem Sales Corp., 31 Coffey St., Brooklyn, N. Y. **(C-4)**

▼ Forms burster

The Selec-Tronic forms burster has been introduced by The Standard Register Co., Dayton 1, Ohio. It uses "electronic timing" and dial settings to set form lengths automatically. **(C-5)**

◖ Microfilm unit

The Micromat, made in Italy, and distributed in this country by Hanimex (U.S.A.) Inc., San Francisco, is a combination camera, reader, and auto-focus enlarger. It uses 35 mm. film. Other features include a counter to record automatically the number of photos taken. It is priced at $583, F.O.B. New York or San Francisco. **(C-6)**

▲ Restyled typewriters

Paillard Products, Inc., 100 Sixth Ave., New York 13, has announced that its Swiss-made Hermes Ambassador line of office typewriters has been restyled. The new models have a four-position ribbon, other improvements. **(C-7)**

▼ Telephoning aid

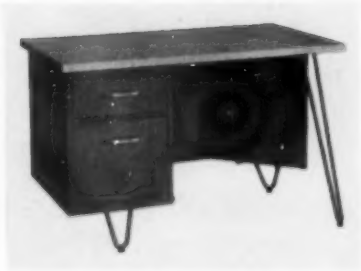
The Tele-Muff is a device, made of vinyl foam plastic, to fit over telephones, dictating machines, and intercom equipment to deaden outside noises. It is made by Tele-Muff Co., 1421 First St., San Fernando, Calif. **(C-8)**

▲ Stationery compartment

The Sec-Tray is a new type of stationery compartment, designed to be mounted on channels on the bottom of a typewriter platform. When not in use, it slides out of the way. It is a new development of The Globe-Wernicke Co., Cincinnati 12, Ohio. **(D-1)**

◀ Air purifier

This air purifier and deodorizer is offered by Gubelin International Corp., Mt. Kisco, N. Y. It measures 11 by 7 by 4 in., weighs 8 lbs., and can be hung on a wall. Called the Gysling Swiss Air-Cleaner, it is priced at about $50. **(D-4)**



▲ Professional desk

The H-O-N Co., Muscatine, Iowa, has added two desks to its Professional Suite line. The desks are available in heights for typing and for standard uses. Right- and left-pedestal models are offered. Tops are of poly vinyl panelyte. **(D-2)**

▼ Side chair

The Model 23-L General Chair is new in the line of Cosco chairs made by the Hamilton Mfg. Corp., 1503 Cottage Ave., Columbus, Ind. Legs and frame are of square metal tubing. The backrest is contour-curved and padded with Tufflex. The seat is saddle-shaped and cushioned. Back legs project to prevent back rest from scarring the wall. **(D-3)**

▶ Lounge furniture

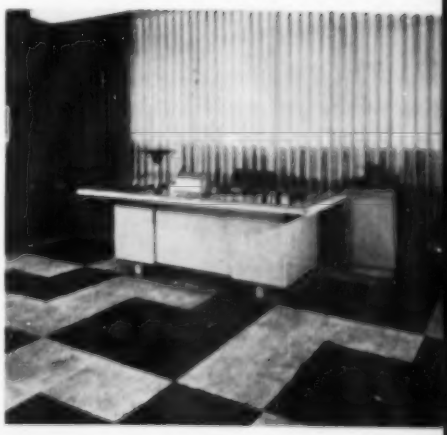
Shown is a new group of sectional lounge room furniture recently brought out by The Milwaukee Chair Co., 3022 W. Center St., Milwaukee 45. The design was created to blend with both modern and traditional furnishings. Back legs are flared to prevent backrests from marking walls. **(D-5)**

▶ Carpet squares

Karpet-Squares are self-sticking, self-cushioned 18-inch squares of cotton carpet, manufactured by Allen Industries, Inc., 295 Fifth Ave., New York. They are offered in a variety of colors and can be combined in innumerable arrangements. The pressure-sensitive adhesive back is designed to adhere to any surface, including primed cement. **(D-6)**

▲ New chair line

These American Banker chairs have been introduced recently by The B. L. Marble Chair Co., Bedford, Ohio. They were designed to blend with contemporary trends in office decoration. The chairs are made of American Black Walnut, with upholstered seat and back pads made of polyurethane foam, which are available either separately or in combination. The rear legs extend back sufficiently to save marking the wall. **(D-7)**



News pictorial

◀ Executive change at IBM

Thomas J. Watson, Jr., who has been president of the International Business Machines Corp. since 1952, has been elected chief executive officer. Here he is congratulated by his father, the late Thomas J. Watson, Sr., IBM board chairman. This is one of the last photographs taken of the elder Watson, who died on June 19.

▼ Award to Pitney-Bowes

Boyd Campbell (left), president of the Chamber of Commerce of the U. S., presents a first annual "national recognition award" to Pitney-Bowes, Inc., for "fostering economic understanding among employees." Frederick Bowes, Jr., accepts the award.

◀ Secretaries honored

In observance of National Secretaries Day, Carl P. Ray, (right) vice president of the Underwood Corp., spoke on a recent CBS-TV telecast, while Constance Loschivao, of Philip Morris, Inc., representing the secretaries of the country, received a new Underwood Universal portable typewriter. Comedian Jack Paar looks on.

▶ NACA awards prize

Russell E. Fultz, shown at right, receives an award given by the National Association of Cost Accountants from A. P. Jones of NACA's Western Carolina Chapter. Mr. Fultz, who is manager of plant accounting at the Dayton Rubber Co.'s branch in Waynesville, N. C., was honored for a recent article on "Distribution of Factory Overheads," which won second place in a national NACA contest.

▲ Original wall design

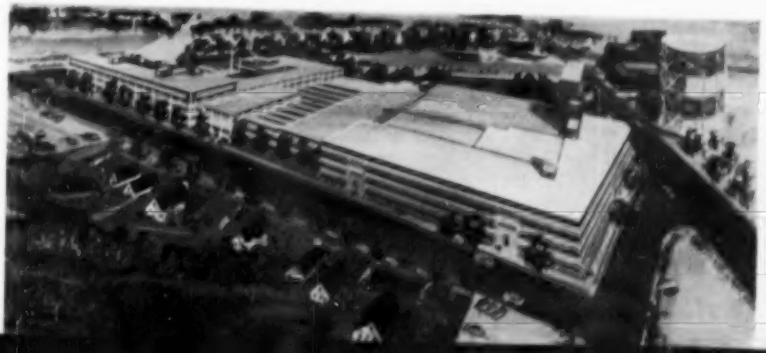
Paul B. Shoemaker, vice president in charge of sales for Masonite Corp., has a wall device in his office made of many of his company's products. Its "Peg-Board" panels support Mark Coomer serigraphs, which are printed on Tempered Presdwood. Sides of the planter are of Masonite Ridgeline, an exterior siding.

◀ Navy installs "brain"

The Navy has installed an IBM Type 702 computer in its Aviation Supply Office, Philadelphia, to supply inventory information in connection with servicing thousands of Naval aircraft in all parts of the world. Here Rear Admiral Frederick L. Hetter, SC, USN, commanding officer, Aviation Supply Office, shows a magnetic tape unit of the 702 to Rear Admiral Ralph J. Arnold, SC, USN, Chief, Bureau of Supplies and Accounts.

Offices built and planned

The phenomenal boom in building in this country has produced some remarkable new offices. Shown on this page are some of the more noteworthy among them. At the top are two pictures of the new Price Tower, in Bartlesville, Oklahoma, built for the H. C. Price Co. after the designs of Frank Lloyd Wright. The building is of cantilever-style construction. Walls and floors are suspended from four vertical supports of concrete, reinforced with steel. Each floor is divided into four separate quadrants. One of these on each floor will be given over to apartments, the remainder to office space. Separate entrances and elevators serve the two types of space. The building has 19 floors. Wall faces are about 45 feet wide. A two-story wing is adjacent on one side. Below the pictures of Wright's new building is shown the recently opened City National Bank, a $3,000,000 structure on Los Angeles' famous Wilshire Boulevard. The building was designed by Welton Becket, F.A.I.A. and Associates. The structure is in an "L" shape, and its construction is of steel and concrete. It has a sub-surface parking area. Drive-in banking facilities are provided. Next below is the new DuPont Plaza Center in Miami, which will provide 100,000 square feet of space for an architects building products bureau, a 14-story office building, and a 301-room hotel. Ground was broken in May. At the bottom is the $3,000,000 main office and factory to be built for Pitney-Bowes, Inc., in Stamford, Conn., for completion in 1958.



A Monthly Feature

Tools of the Office

Equipment for Individual Work Stations

by Robert Beeman

The modern trend to job enlargement has resulted in the development of individual work stations at which the worker can take care of several successive steps in a single operation. Work station equipment is now being designed so that the worker has immediate access to a machine (if required), the records being used, a place to work on them, and storage space for related active records. Examples of modern equipment used in such arrangements are shown on this page. *Pictures by courtesy of Posting Equipment Corp. (at top of page), Remington Rand and Shaw-Walker (center row), Visirecord and Diebold (bottom).*

WHEN machines began to move into the office, it seemed to many that people would eventually have to move out. While such an invasion could be expected to create many problems, there was one problem that appeared to be relatively minor—where to find space for the machines. If they were going to replace people, they might just as well fill the space—as well as the jobs formerly occupied by those people.

Thus, locating machines in the office seemed to come down to a simple question of putting them in the proper order in the assembly line which would be set up to process the work of the office, and in mounting them so they would be reasonably convenient to feed and operate.

But it turned out that people did not move out of the office, and the office eventually had to find room for both people and machines. Offices have not been reduced in size since machines began to take over. On the contrary, space requirements have grown enormously.

Moreover, since people were to remain in the office, more thought had to be given to placing the machines so human beings could use them efficiently.

The first approach to mechanization in the office closely paralleled mechanization in the factory. Technological advances in the plant had showed how assembly-line techniques could produce more goods at lower costs than before. Why not then apply the same methods to the office?

Impressed with the possibilities, the experts measured time and studied physical movements. They found ways of reducing a vast amount of clerical procedures to little more than a collection of simple steps, many of which were suitable for handling by machine. Few of the steps required more than routine supervision, at least at the working level.

The work of the office, in other words, was to be ordered into a master plan which might be very complicated, while the individual steps were simplified and routinized to a point at which relatively little exercise or skill or judgment was required to perform them.

Theoretically, this assembly-line technique should have resulted in the most productive of all data handling systems. It did bring improvements, but not as many as hoped for. The snag, of course, was that human beings were still required to operate the machines, and human nature is not amenable to this approach. Human beings, unlike machines, have opinions about the work they do. If they like it, fine. If not, the work suffers.

Factory-type methods are monotonous

In order to use assembly-line methods, work must be chopped up into simple, repetitive units. Such work is almost inevitably monotonous. A job that does not require the use of skill or judgment quickly becomes tedious. The worker loses interest, becomes inattentive to it. His output decreases. He makes more errors. This "most productive" system, in short, is found to have important limitations.

When these limitations at last became clear, the efficiency experts got busy and came up with a new theory —and this one seems to work very well. This is the concept sometimes referred to as job enlargement.

What it consists of basically is increasing the responsibility of the individual to include several steps in an operation. One consequence is that the work becomes more varied—and less monotonous. Another is that if the work is properly allocated, the worker may obtain the satisfaction of following through from beginning to end of an operation. The increased responsibility is also an incentive to interest.

Naturally, complicated operations cannot be handled in this way by unskilled or semi-skilled workers. But, within limitations, a worker can be allowed to handle several different steps in the same operation, rather than just one or two.

Trend is to individual work stations

Consequently, there has been a definite interest in setting up individual work stations which are more or less complete in themselves. A machine work station, for example, may now include not only the machine and the writing surface (if required), but the facilities for storage of the records as well. The worker thus maintains control of the records from beginning to end of the operation. A good deal of modern office furniture has been designed with this concept in view.

Such a work station generally has certain basic elements, such as the machine itself, a place to mount the machine, a place to handle records, and, if need be, to write on them, and a place to store them. Accessory equipment may also be appropriate.

Many different types of equipment meet these requirements. Machines, for example, can be mounted on stands, tables, or desks. Machine accounting records can be kept in trays, tubs, desk drawers, and other containers, and these are found in all shapes and sizes.

In view of this variety, the individual company is left to decide what particular combinations of equipment it needs in a given situation. This, of course, depends on the data handling needs of the company, and this factor, in turn, leads back to a study of systems. As so often happens in examining modern equipment for the office, it is found necessary to think first about systems rather than machines.

Next Month:

Figuring equipment, systems, and devices, including:

Adding and calculating machines

Bookkeeping and accounting machines and systems

Machine desks and stands appear in many designs. Typical examples are illustrated here. Some of these are of metal, others of wood. *Pictures (from top to bottom respectively) by courtesy of Melink, Corry-Jamestown, Myrtle Desk Co., and Security Steel Equipment.*

Posting trays differ from each other in relatively minor design features, many of which are evident in these pictures. Whatever their variations, they are important time-savers in the handling of machine accounting records. ***Pictures by courtesy of Remington Rand (right) and (left, from top to bottom), Wilson Jones (first two), Norfield Methods & Procedures, and Yawman & Erbe.***

This emphasis on systems, in fact, is one of the most significant trends in the office today. The importance of analyzing company needs has been stressed constantly in planning for electronic equipment, but the same principles apply to less elaborate machines. Systems, as is well known, must be tailored to the requirements of a particular organization. It follows that the equipment must be adaptable to suit a wide variety of needs.

Adaptability is stressed

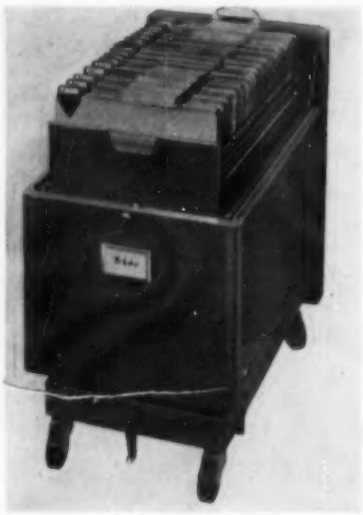
Thus, there is a great deal of emphasis also on flexibility of equipment. This factor is found not only in the machines themselves—just as many an accounting machine can be converted easily from a payroll application to an accounts receivable operation, for example—but in the other elements of the work station. The list at the end of this section covers the principal manufacturers of components which can be fitted into individual machine work stations as required. These include posting desks, trays, and stands, machine desks, stands, and tables, and certain types of filing equipment and accessories. It is especially convenient that these units can be so easily rearranged to adapt to changes in systems.

Fire protection is also a factor

One other trend that has shown itself recently, has been the increase in fire protection given to accounting records at the point of their use. This subject was discussed in the May issue of this magazine.

Record protection is no longer confined to safes in which records are stored at night. Statistics show that most office fires occur during working hours, when safes cannot very well protect records in use.

Because of this fact, there has been new interest in insulating the desks and cabinets in which records are maintained for active use. Many ledger desks, trays, and cabinets now offer this type of protection, and many trays



are made light and portable so they can be quickly placed in fireproof storage—which may be the posting desk itself.

Aside from the developments intended to make possible the building of individual work stations at which several functions are performed, and those which increase the fire protection afforded, most contemporary developments are in the form of refinements to add to the convenience of using the equipment.

For example, posting trays are available in short and long sizes. Some argue that they should be relatively short—that filing capacity is less important than the increased speed of filing and reference made possible by bringing all records within easy reach. Others think filing capacity more significant. Thus both types are offered.

And there are other features: Various devices of the "wobble block" type are employed to keep records open in a "V" to permit easy replacement of sheets in use. Trays and stands, both for machines and records are made adjustable in height, and models are available for standing and for seated operators. In some models of trays, compressor blocks can be adjusted from the front, rather than from the back.

These are typical of the features which make modern equipment easier to use than before. This list is by no means complete, but the features vary so much from model to model and from make to make that it would be impossible to try to list them all.

Tools of the Office

The list which follows does not attempt to cover every conceivable type of equipment which could be used at individual machine work stations, but it is believed to include the major categories and the principal manufacturers.

The Manufacturers

Acme Visible Records, Inc., Crozet, Va. Visible record equipment, including Veri-Visible tub files for machine accounting records. Also Super-Visible tub desks, tray units, and other equipment.

All-Steel Equipment Inc., 100 *Griffith Ave., Aurora, Ill.* Calculating machine desks and posting desks.

Art Steel Co., Inc., 170 *W. 233rd St., New York* 63. Bookkeeping and calculating machine desks, posting desks, office machine tables.

Automatic File & Index Co., 549 *W. Washington Blvd., Chicago* 6. Posting trays.

Badger, Inc., La Crosse, Wis. Business machine stands.

Browne-Morse Co., Muskegon, Mich. Calculating machine desks.

The Buckstaff Co., 1122 *S. Main St., Oshkosh, Wis.* Office machine tables, of wood.

Business Efficiency Aids, 8114 *N. Lawndale Ave., Skokie, Ill.* Magne-Dex posting trays, desks, and stands. Card compartments use principles of magnetism to fan out cards at any given section of the compartment to make top lines visible.

Cole Steel Equipment Co., Inc., 285 *Madison Ave., New York* 17. Office machine stands.

Corry-Jamestown Mfg. Corp., Corry 5, *Pa.* Steel Age bookkeeping machine desks, calculating machine desks, posting desks.

Cramer Posture Chair Co., 1205 *Charlotte St., Kansas City* 6, *Mo.* Office machine stands.

D & L Furniture Co., 61 *W. Hubbard St., Chicago.* Line of modular furniture, including desks, into which can be incorporated places for machines, posting trays, etc.

Dependable Mfg. Co., 24071 *Fort Crook Rd., Bellevue, Neb.* Office machine stands.

Desks of America, Inc., P. O. Box 6185, *Bridgeport* 6, *Conn.* Office machine tables.

Diebold, Inc., 2011 *Mulberry Rd., Canton* 2, *Ohio.* V-line posting trays; Tra-Dex and V-Dex Vertical-Visible Trays; all of these with Parallel-O-Gram Separators to open easily to a "V". Rotary and mechanized card files. Some equipment is insulated.

Durable Metal Products Co., 1709 *St. Marks Ave., Brooklyn* 33, *N. Y.* Office machine tables.

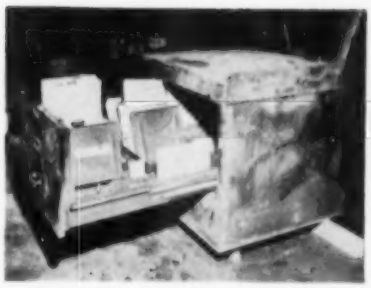
Excellent Cabinet Works Co., 415 *Withers St., Brooklyn* 22, *N. Y.* Office machine tables.

Louis H. Farber Co., 31 *E. Congress St., Chicago* 5. Office machine stands.

The General Fireproofing Co., 413 *Dennick Ave., Youngstown* 1, *Ohio.* Mode Maker, Generalaire, and the 1600 line of office machine desks.

The Globe-Wernicke Co., Ross & Carthage Aves., Cincinnati 12. Streamliner line includes posting desks, office machine desks, and office machine tables.

Goodfrend Metal Products Co., 1019 *E. 75th St., Chicago* 19. Office machine stands.



To protect records against fire during working hours, insulated storage at the point of use is increasingly popular. This Shaw-Walker posting desk saved valuable records in a recent fire.

Hart Mfg. Co., 2400 *Endicott St., St. Paul* 14. Office machine stands.

Harter Corp., 80 *Prairie Ave., Sturgis, Mich.* Office machine stands.

Haskell, Inc., 303 *E. Carson St., Pittsburgh* 19. Office machine desks and tables.

Imperial Desk Co., 1312 *W. Florida St., Evansville* 7, *Ind.* Calculating machine desks.

Indiana Desk Co., Inc., 1201 *N. Mill St., Jasper, Ind.* Calculating machine desks.

Intasco Corp., 3021 *Carroll Ave., Chicago* 12. Posting trays and stands.

Invincible Metal Furniture Co., 842 *S. 26th St., Manitowoc, Wis.* Calculating machine desks.

Jasper Office Furniture Co., Jasper, Ind. Bookkeeping machine desks, calculating machine desks, and posting desks.

Jasper Table Co., Inc., 206 *Main St., Jasper, Ind.* Office machine tables.

KOL, Inc., 2323 *Ellis Ave., St. Paul* 14. Office machine stands and tables.

Karl Mfg. Co., 32-34 *Ionia Ave., S. W., Grand Rapids* 2, *Mich.* Office machine stands and tables.

Office machines may be mounted on desks, stands, or tables. Typical arrangements, including desks, are shown on other pages. Here are pictured several stands considered to be representative of the variety of designs available. *Pictures by courtesy of Toledo Metal Furniture (left and center) and Tiffany.*

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Tools of the Office

King Posture Chair Co., 953 S. Raymond Ave., Pasadena 2, Calif. Office machine tables.

Le Febure Corp., 716 Oakland Rd., N. E., Cedar Rapids, Iowa. Extensive line includes posting trays and stands, posting desks (some "fire tested"), calculating machine desks, office machine stands, tub files, tray-binders, and accessories.

Lit-Ning Products Co., P. O. Box 3370, Fresno 6, Calif. Posting trays and stands.

The Marshallan Mfg. Co., 1061 W. 11th St., Cleveland 13. Office machine tables and stands.

Maso Steel Products, 53 W. Jackson Blvd., Chicago 4. Office machine tables and stands.

McLeod Furniture Co., 5800 24th Ave., Kenosha, Wis. Office machine tables.

Meilink Steel Safe Co., 1672 Oakwood Ave., Toledo 6, Ohio. Hercules posting trays and office machine stands.

Metalstand Co., 7520 State Rd., Philadelphia 36. Office machine stands.

Modern Steelcraft, 230 Fifth Ave., New York 1. Office machine stands and tables.

Morval Corp., Herkimer, N. Y. Bookkeeping machine desks.

Myrtle Desk Co., P. O. Box 1750, High Point, N. C. Bookkeeping and calculating machine desks and posting desks; office machine tables.

National Blank Book Co., P. O. Box 791, Holyoke, Mass. Simplex posting trays and All-Purpose posting stands.

Nemes Furniture Factory, 2631 N. Lehmann Court, Chicago 14. Bookkeeping machine desks.

Norfield Methods & Procedures, Inc., P. O. Box 1012, Oak Park, Ill. Posting trays and stands. Also a small portable posting box which opens into a posting tray but can be closed and locked.

Nu-Craft Products Co., 321-327 Clarkson Ave., Brooklyn 26, N. Y. Posting trays and stands.

Orna-metal, Inc., 2412 S. Seventh St., St. Louis 4. Office machine stands.

Peerless Steel Equipment Co., 6600 Hasbrook Ave., Philadelphia 11. Bookkeeping machine desks, calculating machine desks, and posting desks.

Posting Equipment Corp., 1026 Niagara St., Buffalo 13, N. Y. Duo-Matic, Tilt-o-Matic, Porta-Matic, and V-Matic posting trays and P.E.C. stands.

ADDO-X's light-as-a-dove's feather touch, short key action — minimizes finger travel and saves operator's energy. The STEP-O-MATIC lever offers you calculator performance at adding machine cost when multiplying. No other adding machine is so saving of your operator's time and energy. Write for literature†.

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WESTERN ADDO MACHINE CORP., 2921 BEVERLY BLVD.
LOS ANGELES, CALIFORNIA, TEL: DUNKIRK 5-2247

†Also on our NEW two register machine.

For further details mail this advertisement with your letterhead.

Quigley Furniture Co., 62 Foster St., Whitesboro, N. Y. Office machine stands and tables.

Remington Rand, Div. of Sperry Rand Corp., 315 Fourth Ave., New York 10. Machine ledger trays, posting desks, card posting units, card files.

Riteform Chair Co., Inc., 2300 Ellis Ave., St. Paul 5. Office machine tables.

Security Steel Equipment Corp., 50 Manhattan Ave., Avenel, N. J. Crestline, TD series and 4 Leg Line calculating machine desks.

The Shaw-Walker Co., 1950 Townsend St., Muskegon, Mich. Posting trays, including insulated Fire-File models, insulated Fire-File posting machine desks, posting stands, machine desks, and insulated Fire-File card desks.

The C. E. Sheppard Co., 44-01 21st St., Long Island City 1, *N. Y.* Posting trays and stands.

Sherman-Manson Corp., Selina Rd., St. Marys, Ohio. Office machine tables and stands.

Stationers Guild of America, 1421 Chestnut St., Philadelphia 2. Posting trays and stands.

Tools of the Office

Steel-Parts Mfg. Co., 4630 W. Harrison St., Chicago 44. Office machine stands and tables.

Stempel Mfg. Co., 2830 Roberta St., Dallas. Office machine tables.

Stewart Office Furniture Co., 6520 N. Hoyne Ave., Chicago 45. Office machine tables.

Stolper Steel Products Corp., Menomonee Falls, Wis. Consolett office machine stands and tables.

Sun Engineering & Mfg. Co., Inc., Pinellas International Airport, St. Petersburg, Fla. Office machine tables.

Systems Sales Co., 11 Broadway, New York. Card punch desk pedestals.

Tiffany Stand Co., Inc., 7350 Forsyth Blvd., St. Louis 5. Office machine stands.

Toledo Guild Products, Inc., 228 Fassett St., Toledo 5. Office machine tables.

The Toledo Metal Furniture Co., 1100-1200 Hastings St., Toledo 7. Office machine stands.

Vanpe, Inc., 4613 S. State St., Chicago. Bookkeeping machine desks, calculating machine desks, and office machine stands and tables.

Visirecord, Inc., 54 Railroad Ave., Copiague, Long Island, N. Y. Posting trays, posting desks, posting stands, and tub files and modular filing-posting units designed for use with "visible-vertical" record systems.

Vue-Fax Corp., 655 Main St., Westbury, Long Island, N. Y. Tub files and posting desks for use with "visible-vertical" record systems.

Wassell Organization, P. O. Box 390, Westport, Conn. Posting trays.

Watson Mfg. Co., Inc., 63 Taylor St., Jamestown, N. Y. Card files.

Welch Industries, 8557 San Fernando Rd., Sun Valley, Calif. Office machine stands.

Wells Furniture Mfg. Co., Laurel, Miss. Office machine tables.

Wilson Jones Co., 209 S. Jefferson St., Chicago 6. Columbia, DeLuxe, Liberty, and other posting trays and stands.

Yawman & Erbe Mfg. Co., Inc., 1099 Jay St., Rochester 3, *N. Y.* Y and E posting trays, posting desks, posting stands, office machine desks, office machine tables, and tub files.

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Leopold *Document* Desk

The distinguished *Document* design and restful wood tones bring character, depth and warmth into your office. True luxury ... from a desk that is also carefully crafted for maximum work efficiency. Preferred by top executives the country over. Write for Document brochure.

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686 Front Avenue, Grand Rapids 4, Michigan

TYPEWRITERS • CASH REGISTERS • ADDING MACHINES • SAFES • FILES • BOOKKEEPING MACHINES

In Short—
(*Continued from page* 15)

ning August 6th, will be "Application of Computers to Engineering, Science and Industry."

Automation conference for senior executives to be held in fall

Planned for senior executives only an Office Automation Conference will be held in New York in November, under the joint sponsorship of Fordham University School of Business and Richard Rimbach Associates, Inc., Management for the Third International Automation Exposition which will be held November 26-30 at the Trade Show Building, 500 Eighth Ave. Gordon L. Mattson, who will manage the conference, served the University of Chicago in a similar capacity last fall.

IASA announces election of officers

The Insurance Accounting and Statistical Association, which held its 34th annual Business Conference and Equipment Show at the Hotel New Yorker, New York, May 21-23, has announced the election of the following officers: President, Rodney B. Wilcox, Connecticut General Life Ins. Co.; vice presidents: Charles Andrew, Jefferson Standard Life Ins. Co.; William Babcock, Jr., Keystone Auto Club Casualty Co.; Lielyn M. Cox, Employers Mutual Liability Ins. Co.; John D. Hicks, Fidelity Mutual Life Ins. Co.; Ernest E. McCandless, United Benefit Life Ins. Co.; and Matthew Rodermund, Interboro Mutual Indemnity Ins. Co.

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Sorg's *410 Translucent* is manufactured with controlled translucency so that whether you use typewriter, pen, pencil, or you print it, you will always be sure to get clean, sharp, identical copies every time! In addition, it is strong and durable — stands up well under erasures and frequent handling.

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People in the News

E. J. Hayne has been named manager of plant accounting, Pittsburgh Coke & Chemical Co., Pittsburgh.

Walter J. Wolford, accounting services manager, A. B. Dick Co., Chicago, has been elected president of the Chicago chapter, National Machine Accountants Association.

William F. Hoey has been appointed sales office manager at the headquarters of Oswego Falls-Sealright Co., Fulton, N. Y., and will continue also as sales supervisor.

James K. Lindsay, secretary-treasurer of Heyden Chemical Corp., New York, has been named treasurer of American Plastics Corp., a Heyden subsidiary.

Walter R. Boris has been elected secretary of Consumers Power Co., Jackson, Mich., succeeding *Archie J. Mayotte*, who has retired.

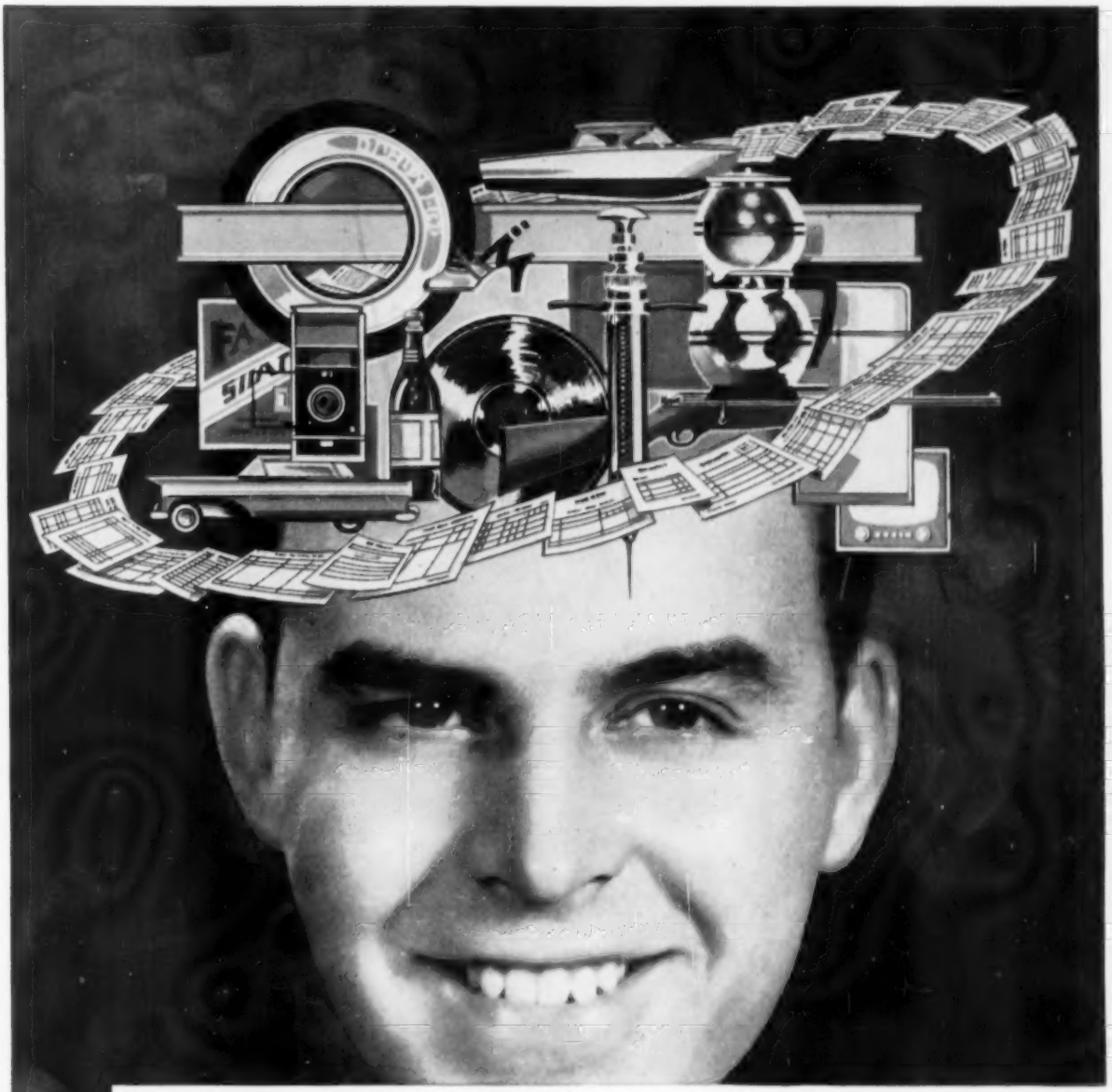
Thomas J. Watson, Sr., of IBM, dies

Thomas J. Watson, Sr., board chairman of International Business Machines Corp., died on June 19 in New York of a heart attack. He was 82.

In his early career Mr. Watson worked 18 years for The National Cash Register Co. In 1914 he became president of the Computing-Tabulating-Recording Co., which merged with the International Business Machines Corp. ten years later and took the name of the latter.

Under Mr. Watson's guidance IBM has grown enormously. It is reported to have done more than half a billion dollars worth of business in 1955.

On May 8, Mr. Watson turned over the post of chief executive officer to Thomas J. Watson, Jr. (See picture on page 44.)



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If you feel there's an office procedure in your business that's not "paying its way", ask a Reynolds & Reynolds Representative to call. He will bring you the "know how" necessary to expertly analyze your problem and suggest the right corrective measures.

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COFFEE BREAK PROBLEM
by AL CAPP
GROANN!! OH, THAT COFFEE BREAK STAMPEDE!!
COMPLETE CONTROL MOKUM IS MAH NAME, AN' CONTROLLIN' COFFEE BREAKS IS MAH GAME—WIF TH' RUDD-MELIKIAN COFFEE DISPENSER!!
THEY LOVE THAT KWIK-KAFÉ COFFEE, C.C.—SAVES 'EM TRIPS OUTSIDE, IN ALL KINDS O' WEATHER AND SAVES TIME FOR ME!!
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The coffee-break is a problem in any size office or plant! A Rudd-Melikian dispenser is the answer. It's enjoyed by employees—helps keep them at the job. Conveniently and dependably serves Kwik-Kafé coffee—100% pure, fresh-frozen. Check with your local Kwik-Kafé dealer or write direct to us for complete details.

RUDD-MELIKIAN, INC.
Hatboro, Pa.

Gentlemen:
Please send me Booklet 16-G, explaining how to control the coffee-break with R-M dispensers

Name.....
Firm.....
Street.....
City.....Zone....State.....

Supervisors—

(*From page* 38)

and fielders or a couple of 20 game pitchers more than the other, or a college coach gets a few more quality players than the others and they win the pennant. But the other teams in the league have to do with less. The result is that there are teams in tenth place and spread all the way to the number one place. This fact is significant for those who claim that work or production standards reached by one group or individual can be obtained by all.

So it is with Dick Bryant who manages his team of nine requisition checkers. He has about all the talent he will get. It is his job to manage it as well as he can and keep it as high in the requisition checking league standing as possible. He should not and cannot be judged, controlled, disciplined or given a bonus either because he exceeds or falls below the standard. A coach who is a hero managing one team, becomes a "bum" a year or two later when his manning changes. What is true of Dick's requisition checkers is also true of some other supervisor's group of 10 clerical workers, another supervisor's group of 20 bookkeepers, another supervisor's group of 15 auto mechanics and another supervisor's group of 29 carpenters. Because that is all the talent there is; there isn't any more.

There is no intent in this discussion to paint a gloomy picture. Rather, an attempt has been made to outline "some facts of life." It seems that these facts of life can be approached in a positive rather than a negative way. Some of these positive methods we who are concerned with production can follow are:

We can train and encourage first line supervisors to use the "good operator method" of setting production standards as Dick Bryant did and take action with the group and each individual to improve his productivity. We can make them the real coaches or managers of their teams.

We can, as each takes over as manager of his team, impose fewer standards, controls, and restrictions on his work. Lessen his load of paper work, reports and statistics, thus giving him more time to get on with the real production of his unit. We can see, in Dick's case, the minimum of paper work involved as compared with many of the systems developed by the experts.

This idea of getting supervisors to set their own production standards is only a beginning toward raising their status and stature. Certainly we have seen in Dick's case how he immediately became involved, once his 2.5 minute standard had been set, in training his workers, in correcting their work habits and in handling attitude and human relations problems.

Restoring supervisors' authority

More and more, and perhaps justly so, we have taken responsibility from our supervisory personnel. More and more we have controlled and regulated their work with standards, formulae and restrictions. Because of this they have lost at least some of the status they used to have.

We might conclude that many of the responsibilities taken from them can be reassumed to the advantage of all concerned. Certainly, we can identify many of the responsibilities which they can be trained both as to skills and attitudes, to reassume. When and if we do, we will add to their status and stature, we will help them to know, rather than question, that they belong to the management of the company.

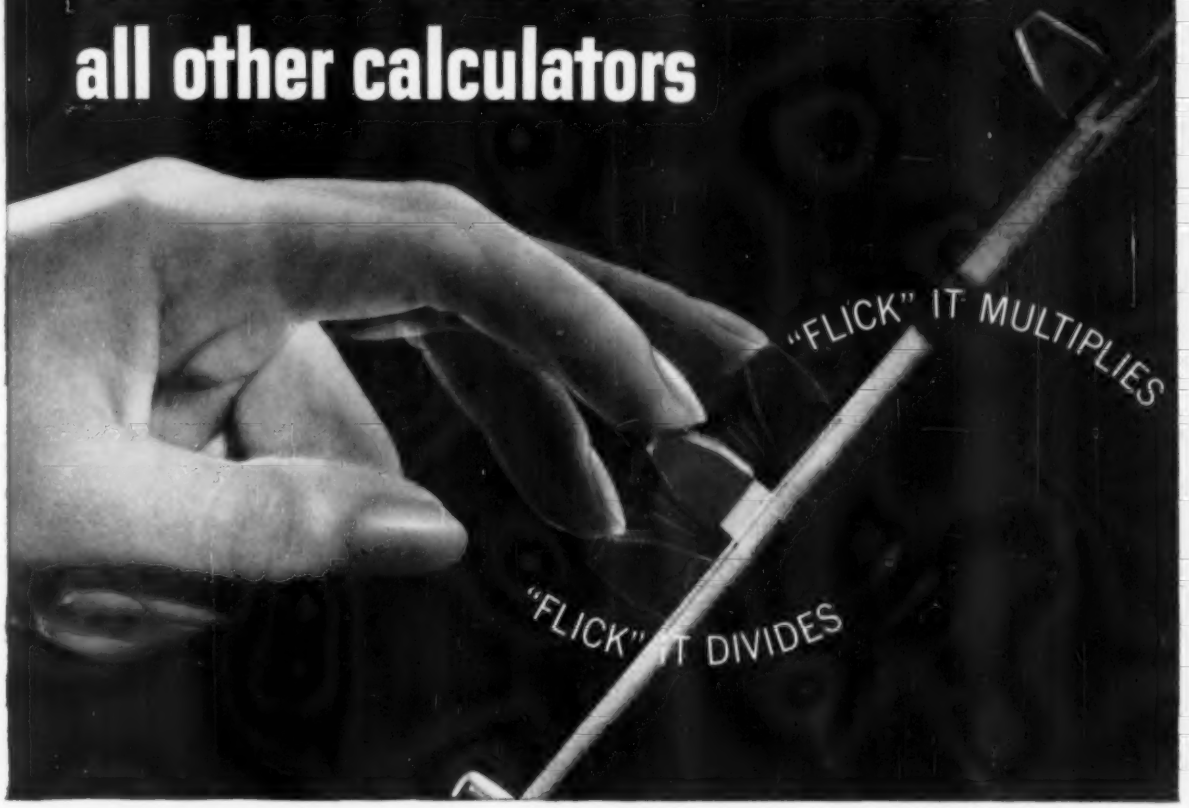
When and if we do, our fortunes, our good fortunes that is, will be told by these supervisors and their workers. These supervisors, like the top noncoms in the military, make or break our organizations.

Certainly the increased production and the profits that come from the work of the first line supervisors as they set standards and resume other management responsibilities should be shared in at least three ways. Part of the increase should go into increased pay for workers and the supervisors, part should go into increased profits for the company and part should be used to give the consumer a little better product at a little better price.

In the broadest sense, then, when when we say that supervisors can tell our fortunes, our good fortunes that is, we mean their own fortunes, the workers' fortunes, the management's fortunes and to a degree the nation's and the public's fortunes.

The combination of all these are our fortunes.

The Victor "Flick" that outdates all other calculators



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Here's the greatest advancement in calculators in a decade. This exclusive Victor feature lets you *multiply* or *divide* with a gentle "Flick" of your finger. No mental counting. "Up" to multiply . . . "Down" to divide . . . middle position to add or subtract—and all *automatically!*

The new Victor Calculator prints your figures *on tape*, just as you would write them. Automatic Constant lever holds figures for repeated division or multiplication. Exclusive Total Transfer button eliminates need for re-entering totals.

Find out how much this Victor "Flick" can do for you—look under "V" for Victor in the adding machine section of your classified phone book or *mail the coupon below.*

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Send me brochure on the New Victor Automatic Printing Calculator, showing *all* the features.

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Conclusion:

How you can read faster while learning more

by Dr. Nila Banton Smith
Director, Reading Institute, New York University

From a forthcoming book by Nila B. Smith to be published by Prentice-Hall, Inc. Copyright, 1956, by Prentice-Hall, Inc.

IN THE FIRST instalment you took a test to find out how well you read before you did any work with the material. You checked both your speed and comprehension in reading a non-technical selection at that time.

In this instalment you will have the opportunity to take another test to find out how well you read now. The article provided for this test is also non-technical and similar in ease of reading to the one which was presented in the first instalment. It is possible for you to read an article of this type at your highest rate. So force your speed as suggested earlier in the series and use all other techniques which you have learned and which are applicable to the reading of this selection.

Following the reading of the article you will be given a speed check and a comprehension test. The results from these two checks will enable you to compare your speed and comprehension scores at the present time with those which you made in reading the article in the first instalment.

Jot down the time that you begin reading and the time that you finish, as usual.

Ready! Start!

Time begun——

"Can reading withstand the competition?

" 'I count that man a friend,' said Abraham Lincoln, 'who gives me a book. Everything I want to know is in books.'

"Modern man might argue with Lincoln. He might say that now much that we want to know can be got from the radio, the television and the movies. Since Lincoln's time, science has grooved many new channels of communication.

"There is no arguing with the great value and utility of these new media. They are attractive and seductive. To read is to think, to conjure up in the imagination the scenes and characters suggested by the printed lines. Reading, in other words, is an active process. Sitting before the radio, the TV or the movies is essentially a passive occupation, a 'spectator sport.' Beyond doubt the new media have brought a great deal of ease into our hurried lives. They have also brought, at least to the minds of thoughtful men, an uneasy question.

"What of reading now? The new media are so easy to take. Will they shortly force reading, which requires effort, to bow out of the picture? Is the day near when we will dust our

(*To page* 61)

Time Begun—

Time Finished—

Reading Time—

Reading Rate—

Comprehensive Score—

MINUTES	$5\frac{1}{2}$	5	$4\frac{1}{2}$	4	$3\frac{1}{2}$	3	$2\frac{1}{2}$	2	$1\frac{1}{2}$	1
WPM	244	268	298	335	383	446	532	670	890	1340

1. No 4. Yes 7. Yes
2. No 5. No 8. Yes
3. No 6. No 9. Yes
10. No

Answers to reading quiz

Immediate account information is available at any branch under new system installed by Jersey bank

The first installation of a new type of electronic data processing system designed by the Teleregister Corporation, Stamford, Connecticut, will be made in the Howard Savings Institution, Newark, N. J., according to an announcement by Teleregister.

The new system, Teleregister reports, will allow tellers in the main office of the Howard Savings Institution, or at any of its five branch offices, to have immediate access to information on the status of any account at any branch. Similarly deposits or withdrawals can be recorded immediately on central office memory drums by any teller.

The new system, beside providing tellers with almost instantaneous information on any one of 250,000 accounts, also computes interest and can handle accounting procedures for mortgages, pay day savings and savings club accounts, according to the bank's president, William L. Maude.

Burroughs shows new printer

Burroughs Corporation has announced what it terms the fastest punched-card fed printing process yet developed for accounting and document production purposes. The Series G Electronic Printer Punch can print more than 41,000 characters per minute, the manufacturer reports.

The first production model installed promises to cut production costs of direct mail advertising and subscription mailings 50 per cent, according to the purchaser, William Watson, president, Names Fulfillment, Inc., Irvington, N. Y.

In its initial press demonstration in New York, the machine printed name and address labels at the rate of 900 a minute for a newsletter going to a credit charge club; identified names of members who had not used the charge system the previous month, separated their cards from the master file, and addressed separate promotion pieces urging the non-users to make more active use of their accounts. All actions were accomplished in one run-through of cards in the machine. (*To page* 78)

Burroughs Series G electronic printer punch goes through its paces at its first showing

S AND PENCILS • FANS • LOOSE-LEAF SUPPLIES • TELEPHONE ANSWERING DEVICES • STENOGRAPHERS' NOTE BOOKS
CARBON PAPER AND TYPEWRITER RIBBONS • INTEROFFICE COMMUNICATING SYSTEMS • FILING SUPPLIES • TYPEWRITERS
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PHOTO COPYING MACHINES • CONTROL CHARTS AND SYSTEMS • SAFES • VISUAL CONTROL BOARDS • FANS
NTAIN PENS AND BASES • PARTITIONS • MICROFILM EQUIPMENT • CHAIR
PAPER DRINKING CUPS MARKING DEVICES • STAPLERS
LROOM EQUIPMENT • • ADDRESSING MACHINES •
VATER COOLERS • ENV NDEX SYSTEMS • FURNITURE
LICATING MACHINES • PAPER AND PADS • PENS AN
CHECK SIGNERS • DESK LCULATORS • ADDING MACHIN
H REGISTERS • DESKS • RUBBER BANDS • CHAIRS
STAPLING MACHINES • C ARPENERS • CASH REGISTERS
ELOPE OPENERS • FURNIT SCHOOL SUPPLIES • DUPLICATI
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OOL SUPPLIES • SHARPENERS • PENERS • RUBBER BANDS
PHOTO COPYING MACHINES • D STENOGRAPHERS' NOTE BOOKS
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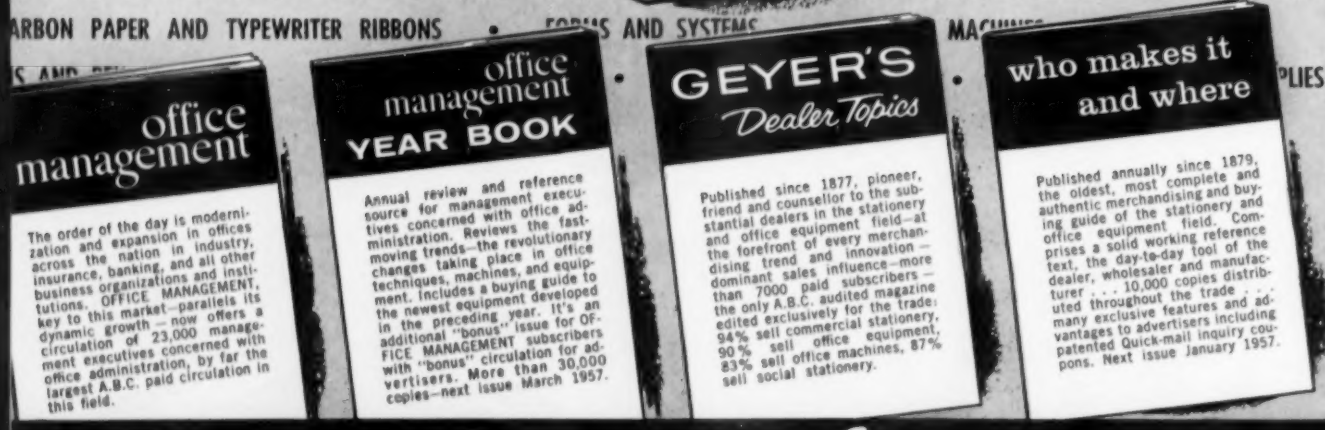
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The order of the day is modernization and expansion in offices across the nation in industry, insurance, banking, and all other business organizations and institutions. OFFICE MANAGEMENT, key to this market—parallels its dynamic growth — now offers a circulation of 23,000 management executives concerned with office administration, by far the largest A.B.C. paid circulation in this field.
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Annual review and reference source for management executives concerned with office administration. Reviews the fast-moving trends—the revolutionary changes taking place in office techniques, machines, and equipment. Includes a buying guide to the newest equipment developed in the preceding year. It's an additional "bonus" issue for OFFICE MANAGEMENT subscribers with "bonus" circulation for advertisers. More than 30,000 copies—next issue March 1957.
GEYER'S Dealer Topics
Published since 1877, pioneer, friend and counsellor to the substantial dealers in the stationery and office equipment field—at the forefront of every merchandising trend and innovation—dominant sales influence—more than 7000 paid subscribers—the only A.B.C. audited magazine edited exclusively for the trade; 94% sell commercial stationery, 90% sell office equipment, 83% sell office machines, 87% sell social stationery.
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Published annually since 1879, the oldest, most complete and authentic merchandising and buying guide of the stationery and office equipment field. Comprises a solid working reference text, the day-to-day tool of the dealer, wholesaler and manufacturer . . . 10,000 copies distributed throughout the trade . . . many exclusive features and advantages to advertisers including patented Quick-mail inquiry coupons. Next issue January 1957.

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BOSTON • CHICAGO • DALLAS • SAN FRANCISCO • LOS ANGELES

79th YEAR

Reading—

(*From page 58*)

libraries into the ash can and lose touch forever with all that sparkle, all that refreshment for mind and soul that great men and women have preserved for us between the covers of books?

"The men and women who are seeking Reading Improvement these days say 'No.' They say only on the printed page can they find the specialized knowledge their jobs and social obligations demand. And in addition, many of these modern adults express unsatisfied hunger for the personal enjoyment which can be found only in reading novels, books of travel, biographies and the great classics which have stood the test of time.

Needs for reading

"Daily the writer talks with adults who feel deeply the need for reading. A few of their quotations will be given below to indicate the types of reading needs which are being felt in this day and age.

"Mr. B., a sales manager for a company which manufactures technical gadgets came with this story: 'These gadgets that my company sells change so rapidly,' said he, 'that I just can't keep up with the developments unless I do a tremendous amount of reading. In my work I have to know all about these different products in order to talk with the salesmen in the field. If I don't speed up my reading, the time will soon come when I won't be able to go to bed at all.'

"Mr. K., an oil executive, expressed his needs for extensive and thorough reading in this way: 'I *have* to know what's going on in the World of Oil—oil markets, oil prices, supply and demand, new developments, effect of current happenings in the oil industry, etc. My trade journals and new periodicals are piling up on me. I *must* find some way of covering them more thoroughly and extensively. This information is vital to my work!'

"Mr. K., a radio announcer, came with this story: 'I've recently been made an announcer. The program to which I've been assigned is concerned with classical music. I have to read continuously to find information about the great composers, the period in which they lived, the conditions under which they worked, the circumstances which led to certain compositions. Furthermore, I need to know about artists and poets and writers who lived contemporaneously with the music masters. All of this I need right along in my daily work. Immediately, I want to cover all of the works of Shakespeare—in this case, not because I need Shakespeare in my work too much but just because I've gotten interested in all of this classical stuff.'

"Mrs. L., an attractive black-haired woman of Iraquian birth, began with a timid approach but a determined eye. 'My husband was an American,' she explained with a charming accent. 'He brought me to this country and taught me English and to read a little. Now the children beg me to read stories and the comics to them. I can't read well enough so they can understand. Today my three-year old said, "Mummie, you should read better than that. I don't know what Peter Rabbit said." Please teach me to read better so my children can enjoy the stories in their story books. And I'd like to do more reading on my own, too—current events, plays, novels, home magazines, etc. I feel that I'm missing a lot!'

"Mr. H., President of a beverage company and a fabulously wealthy gentleman, was sixty and retiring. 'All of my life I have longed to read,' said he, 'and never could spare the time. Now I am going to have plenty of time but I read so slowly I won't be able to cover half of the books I want to. Speed me up so that I can satisfy the hunger that I've always felt for novels, books of travel, biographies—and all the rest.'

"Here we have a few examples of needs which individuals feel for reading—pressing needs for specialized information pertaining to their jobs, and personal needs for enlightenment and enjoyment.

Advantages of reading

"Not only do we *need* to read, but the medium of reading has certain advantages over the other media; advantages which are inherent in reading, itself, and which can be realized through reading, and reading alone.

"In reading you are free to choose what you want and to interpret it in terms of your own thinking. It is inconceivable that Americans, brought up in the rough and tumble of democracy,

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would ever abrogate this right, would ever submit to having all their information and entertainment ladled out to them on a limited take-it-or-leave-it basis.

"In reading, the heritage of the ages is stored up for us, and holds out to us an inexhaustible source for selection. Reading embraces a greater range and variety of material than is available through any other communication medium and it is readily available to us whenever our individual time or interests move us to explore the printed trailways.

"Another advantage which reading has over other communication agencies is that it is speedier. For an efficient reader, reading is more economical of time than TV, radio or pictures. The rapid reader, for example, could probably gather as much information by skimming a newspaper for five minutes as he could obtain from a fifteen-minute broadcast slowed down to the rate of the commentator's oral speech and interspersed with commercials, station identification, and other radio conventionalities. Try it and see!

"Reading has still another significant point in its favor as compared with the more modern media. The reading process is more adjustable to our individual purposes and rates of assimilation. In reading, the individual may proceed at his own pace, he may choose that to which he wishes to give attention and skip that in which he is not interested. If he doesn't quite understand a phrase or sentence; if he enjoys some particularly beautiful passage and wants to linger over it—then he may turn back and go over the particular section again as many times as he likes. While in the movies, radio and television the aim is mass consumption —that is all. Maybe you don't understand parts of the presentation, maybe you would like to see or hear parts of it again, maybe it was too slow for you, maybe it was too fast for you! But all of this is beyond *your* control in using all media except reading.

"Surely the movie, the radio and television have entrenched themselves in American life to such an extent that no one would care to argue the possibility of their endurance and future possibilities. They are truly wonderful inventions and most of us would feel that life would be drab, indeed, without them. There is and should be a very large place for these mass communication media in our present-day living. But this doesn't necessarily mean that the activity of reading is going to pass out of the American scene.

"No, reading is not on its last legs. On the contrary. Rising book sales and peak magazine subscriptions indicate a growing interest in reading, partly, one suspects, because the newer media of communications are stimulating among an ever-widening audience a desire for the benefits which reading and reading alone can provide. Reading will hold its own because it has advantages which are inherent in reading itself, advantages that can be fruitfully supplemented but never displaced or duplicated by any other form of communication."

Write the time begun, time finished, and reading time in the table on page 58 as usual. Compute your reading rate by referring to the scale on page 58 and write that number in the table on the same page also.

Without referring back to the article, read these statements and write "Yes"

(*To page* 66)

Here are **3** smart ways to speed up your mailings...use **Dennison Addressing Labels**

1. IN SHEETS. Most versatile kind of addressing label. Typewriter size sheets for typing and duplicating. Type 33 labels with one insertion in typewriter. Make carbons for multiple mailings. Lint-free; pod-free. 33 labels, $2\frac{13}{16}$" x 1", per sheet.

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office management

Semi-annual Index

January-June, 1956

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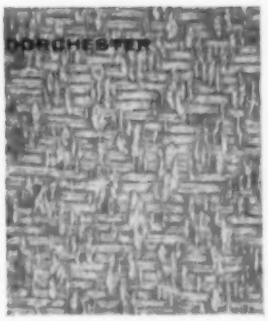
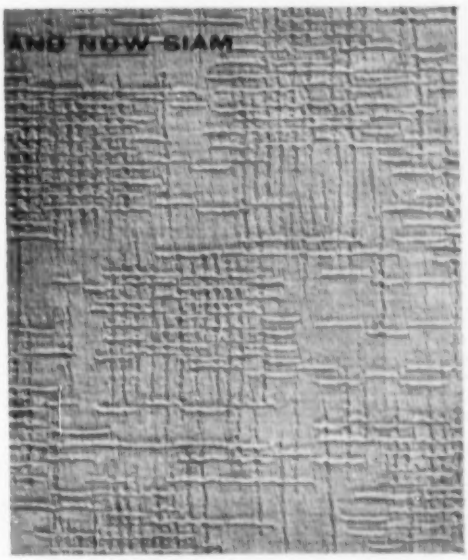
Du Pont Presents

a stunning selection of vinyl upholstery patterns in

Breathable Fabrilite®





THE FAR EAST LOOK—formerly a high-fashion exclusive of luxury fabrics—is now available in extra-durable vinyl upholstery. Siam—newest pattern in Du Pont breathable "Fabrilite"—breathes with the very air of the Orient. Its delicately worked design gives the effect of pongee, and its unusual grain has the rich texture of raw silk. Siam is executed in lustrous, *fade-resistant* Jewel Tone† colors—ten compatible metallic tints (including for the first time a true gold color) that will brighten any room. The result of years of research, Jewel Tone colors are available only in Siam breathable "Fabrilite." Their *fade-resistant* characteristic assures the color's lasting the life of the extra-rugged vinyl! †Patent Applied For.

ONLY BREATHABLE "FABRILITE" OFFERS ALL THESE ADVANTAGES—

- √ Thousands of invisible pores that breathe for floating-on-air comfort
- √ Continuous vinyl coating that leaves no exposed fabric to soil
- √ Exclusive Du Pont finish that resists dirt and wear... washes completely clean with a soapy sponge

NOW YOU CAN ENJOY high-style upholstery that provides *both* the cleanability and durability of vinyl plastic and the airy comfort of a woven fabric! All three patterns in breathable "Fabrilite"* have the exclusive Du Pont plasticizer system which takes full advantage of its elastic knitted-fabric backing. Besides comfort and durability, the result is an easy-to-clean seating surface that stays pliable and retains its original shape.

And each pattern possesses its own distinctive design! Castleton was created by world-famous Russel Wright as a "living" abstraction. The pattern** actually changes when viewed from different angles—subtle overtones and striking contrasts appear in unusual combination. Styled in 15 exciting deeptones and pastels.

Dorchester presents the quality appearance of luxurious hand-loomed tweed. Its fine twilly texture enhances every setting—from waiting room to dining room. The introduction of Siam—with its seductive Far East look—provides still a third choice of a strikingly different pattern to suit your décor.

Castleton, Dorchester, Siam—their extra durability, extra comfort, extra-protective beauty will prove there's no vinyl upholstery like Du Pont breathable "Fabrilite."

Blow smoke right through it! Visual proof (above) shows you that breathable "Fabrilite" upholstery really breathes for the utmost in comfort!

E. I. du Pont de Nemours & Co. (Inc.), Fabrics Division, Wilmington 98, Del.

**"Fabrilite" is Du Pont's registered trademark for its elastic-supported vinyl upholstery. **Design Patent 175,817.*

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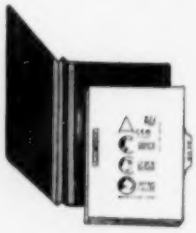

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THE ACCOWAY SYSTEM

(for filing Blueprints and all large sheets)

and other filing supplies

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Ogdensburg, New York

In Canada: Acco Canadian Co., Ltd., Toronto

Reading—

(*From page* 62)

at the beginning of each one which you think is correct, and "No" at the beginning of each one which you think is incorrect.

——1. Modern man would probably agree with Lincoln in his attitude toward books.

——2. Television requires more active effort than reading.

——3. There is no arguing with the great value and utility of the new media of TV, radio and movies.

——4. The oil executive felt a need to do more reading in connection with trade journals and periodicals that had a bearing on his special field.

——5. The radio announcer wanted to do more reading of Shakespeare because he needed it particularly in his work.

——6. The president of the beverage company particularly wanted to read more information about his business.

——7. Reading embraces a greater range and variety of material than is available through any other communications medium.

——8. For an efficient reader, reading is more economical of time than TV, radio or pictures.

——9. Reading is more adjustable to our individual purposes and rates than other media of communication.

——10. Book sales and magazine subscriptions are suffering heavy losses due to the newer media of communication.

Check the accuracy of your answers with the key on page 58. Allow a score of 10 for each correct answer. Record your total score in the appropriate space in the table on page 58.

Comparing results

The scores from this last test should show that you have made much improvement since beginning this series. This improvement should not cease, however, with this last installment. No end points have been found for the number of words per minute which an individual can read, nor for the depths of comprehension which he may attain. Keep on practicing the techniques which you have been taught, and keep on improving! The frontier is open to all who care to adventure in the realm of reading improvement.

Seven sacred cows—

(*From page* 31)

us—or is it that we do not know that it is hurting us? The average company maintains at least 2,000 pieces of paper for every person on the payroll. Processing these records at a conservative 20 cents apiece creates an overhead cost for paperwork alone of $400 per year (equipment, supplies, personnel, etc.) for every man on the payroll. In a government agency, a personnel office, or a public utility (surprisingly enough, the data are comparable), multiply the volume and costs by five. Raise the ante to at least ten times the 2,000 pieces of paper and $400 per year for accounting offices or purchasing offices for concentrated paperwork operations. These are substantial amounts actually eating away at net profits in every company. And there is 65 cents waste in the average dollar spent for paperwork today.

See— these are embarrassing (though proven) data. Is it not much better to hide the knowledge that there are new professional techniques to establish effective paperwork for the one-man to the 10,000-man organization? Is it not much better to look the other way when audits can establish in one to three days just exactly how efficient the operation is when measured against scientific standards? Is it not much better to muddle along with a few "school solutions" and common sense than admit the need for change or for assistance?

It must be much better because that is what we are doing.

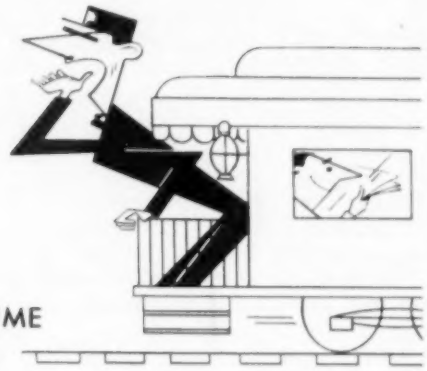
AMA—

(*From page* 27)

The rewards will be great for the company that gives serious attention and its best thinking to the planning function, he said, but there are difficulties in establishing a long range planning program. One is the lack of time on the part of busy executives. A second, is the "not wholly negative, but definitely skeptical attitude toward planning which permeates virtually every area of modern business."

This attitude, he continued, is found in all levels of business but is most prevalent in specialist categories, and among those employees who have com-

ALL-L-L ABOARD



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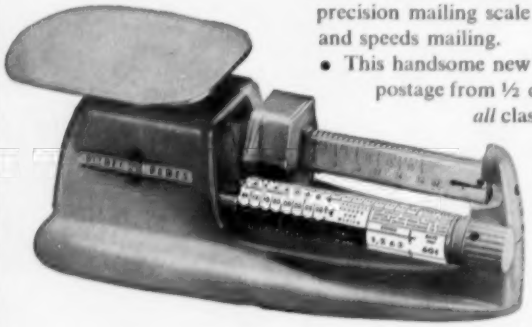

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- This handsome new model 4900 computes postage from ½ ounce to 1 pound—for *all* classes of mail. Its handy cylindrical chart permits swift, safe rating of letters and small parcels, including air mail. Prevents loss of postage through *over*payment, and loss of good will through *under*payment (with resulting "postage dues"). The 4900 can be a real saver of time and money in *your* office!
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paratively few contacts with top management.

Citing his own company's experience, Bridges pointed out that a utility must have a good long range planning program, since it must start creating facilities years in advance to meet anticipated needs. The size of the facilities and the estimate of the needs must both be matched—and this requires the most exact advance planning.

For these reasons, Cleveland Electric has adopted a policy of decentralized management to give top executives more free time for planning and policy making, as opposed to routine operating duties, he said.

"Authority was delegated down the line to allow decisions and action as near the firing line as possible," he declared, "with control through a plan of after-action appraisal."

In this reorganization, all clearly related activities were put under the same supervisor, he said, and the entire chain of command was shortened. This was accomplished through the consolidation of activities and elimination of all "one-over-one" assistant positions. This in many cases allowed the elimination of two layers of supervision, and the reduction of the total number of supervisory layers to four or less, he declared.

Intermediate levels strengthened

By the same token, new intermediate supervisory positions received more authority.

The company clearly defined each supervisory position's area of action in a "responsibility guide," and emphasized the principle of individual accountability for actions and results.

In line with giving individuals more authority and more responsibility, the number of committees was substantially reduced.

"This reorganization also helped to minimize the problem of skeptical attitudes toward planning," Bridges said. "With the emphasis on individual accountability, employees became more aware of the importance of planning in fulfilling their own responsibilities."

Cleveland Electric has formed one new committee, even though it has discontinued many others, Bridges said—a committee to coordinate planning, to encourage it at all levels, and to control key planning jobs. The committee is composed of the president, the company vice president, and seven

group vice presidents, as well as a committee secretary. It can discuss planning projects and make recommendations concerning them, but it has no authority to take final action on any planning project: that is considered a line responsibility.

The planning committee meets weekly to check the progress of major projects, and suggest action in areas where it is felt that planning is inadequate. Each major planning project has a "sponsor" who sits with the central committee to keep it informed of his project's progress.

Cleveland Electric's policies of decentralization, and increased emphasis on planning at all management levels have already benefited the company in various tangible ways, Bridges reported.

"We now have a system for handling planning projects, a system of establishing line responsibility, a system for coordination of all elements involved, the mechanics and organization to attack problems, and a system for reporting progress," he concluded. "In brief, executive planning, largely through committee action, has set up a framework for more efficient planning and performance in virtually all areas of operations."

Emphasis shifted back to the need for greater application of the social sciences in business management at the Thursday afternoon session, when Dr. Rensis Likert, director, Institute for Social Research, University of Michigan called for a fundamental change in the character of business management, saying that without such a change many business problems cannot be solved.

"Research demonstrates that present management systems produce sufficiently strong hostile reaction among employees to restrict production appreciably," Dr. Likert told the group. Research has also indicated, he continued, that the formal organization of many companies is so inadequate that many important functions must be carried on by the "informal organization."

New theory asked

This demonstrates, according to Likert, the need for a new theory that will combine the resources of the scientific management approach, and the insights obtained from research on leadership, motivation, and organizational factors.

Such a theory, he went on, should draw on the "major motivational forces that influence human behavior in working situations—economic motives, ego motives, security motives, curiosity, creativity, and the desire for new experiences."

The most effective organization, he continued, is one in which all personnel belong to "well-knit" teams, which have their own performance goals and standards. Such teams would be linked together by individuals holding overlapping memberships in more than one group.

Under this theory of organization, he declared, each work group would consist of one leader and all the personnel reporting to him. The leader in turn would be a subordinate in another group. Thus, each of the teams in the organization would be linked together by the individuals who are in charge of one group, and are members of a higher one.

The individuals serving as links can only perform their function well if they are capable both of influencing the group in which they are dominant, and of being influenced by the group of which they are a subordinate member, Likert said. This means that they must be good leaders and loyal members.

Operations research, in spite of its

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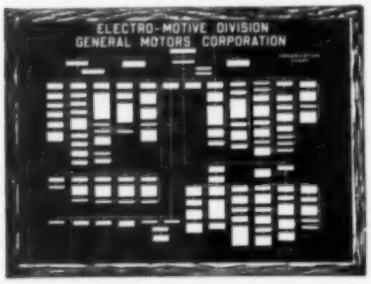

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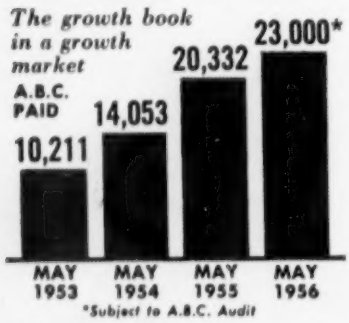

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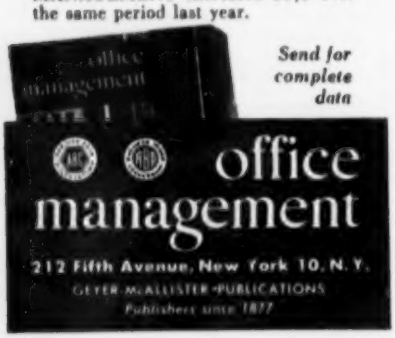

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forbidding title, is not a subject that should be avoided by the average company, Roger B. Crane, manager of research, management sciences, Touche, Niven, Bailey & Smart, Detroit, told the top management group on Friday, the closing day of conference. It is not a collection of special mathematical techniques, he asserted, but a function which most major companies are already carrying on under one name or another.

Defining operations research as "research on operations," Mr. Crane broke the definition down further by stating that "research" in this context meant the use of recognized scientific principles and techniques, and "operations" meant the actual routines and plans of the company.

O. R. unit budget

In establishing a formal operations unit as a separate entity, Crane advised, the unit should be placed on the staff of the company executive responsible for overall company operations, planning, and control. It is best to place the operations research staff close to the center of the organization, the speaker explained, because the inherent complexity of a high-level business problem is not necessarily greater than that of a low-level one, and therefore its cost of solution need not be higher. Moreover, solution of a major problem in a highly placed department almost always involves the solution of problems existing in subsidiary departments.

He suggested as a rule of thumb in creating an operations research unit that a budget of about 1/10 of one per cent of total company operating expenses be allotted to operations research. This allotment might be smaller in extremely large companies, he declared, since the relative percentage of effort needed for effective research does not increase in direct proportion to a company's size, and it might be necessary to allow a larger budget if a company is engaged primarily in service activities. In the latter case, operations research is the same as product research in a manufacturing company, he pointed out. Again, more effort than this rough rule would indicate might have to be given operations research if a company were in a situation of extremely rapid expansion, or very sharp competition.

Department personnel, the speaker recommended, should include men or women trained in advanced applied mathematics, research methods as used in the physical sciences, and modern applications of scientific methods to business problems.

In developing a research program in an operations research unit, the speaker recommended that the first step be a careful general analysis of the entire company, followed by determination of specific projects covering major company operations. He advised that the first projects tried be those that have been successfully accomplished by operations research in other companies, and that each project be broken down into a series of individual steps for easier solution.

The relative balance within an individual between satisfaction and discontent is the most important factor determining that individual's qualifications for success in top management, Dr. Stanley F. Teele, Dean, Harvard Graduate School of Business Administration, told the concluding luncheon session of the conference. Too much conflict within the individual is a serious handicap, he said, and such handi-

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caps "are far more often the barriers to effective performance than intellectual incapacity or lack of necessary knowledge."

A degree of dissatisfaction is, however, essential to continued improvement, he pointed out. Striking the proper balance between the two feelings is essential to success and progress, he said, and business should attempt to learn what it can about aiding men to find this balance.

Discussing the relative emphasis placed on "breadth" and "specialization," Dr. Teele said much of the present controversy is pointless "because it has so completely neglected the element of time." Most top business leaders have been specialists at one point or another in their lives, he pointed out, but their distinguishing characteristic, was that, even while specializing, "they looked around and ahead.

"This is what should be sought," he continued, "the man who is so well rounded that he can go through a necessary period of specialization, do well at it, and then at the proper time rise above his specialties."

The need for "breadth" will grow in the future, Dr. Teele pointed out, because the growth of business, and its increasing complexity, will make the role of the individual who can see the entire picture increasingly important.

"We shall have more specialties and more specialists in business," he said. "The problem is to provide for those who integrate the specialists, those who can use the special knowledge and skills of the specialists without having them themselves."

Training such "generalists" will require the solution of three basic questions by business and education, Dr. Teele said:

What should men learn?

When should men learn?

What should be the balance between formal organized educational activities and development on the job?

The speaker predicted that business would find that some types of managerial skills are best developed at one level of maturity and experience, and others can best be learned at other periods in the individual's life.

"Or perhaps more accurately," he said, "it may be found that successive efforts at different stages of maturity and experience represent the most successful pattern."

The greatest development of skills would be accomplished through carrying out actual job assignments, he said, and this implies a heavy responsibility on a business in creating its own future top managerial talent.

"The arrangement of job experiences of such a type and in such a sequence as to maximize the development opportunity thus becomes the single most important way of developing those who will become top managers," he told the executive group.

All sessions of the three-day conference were held at New York's Hotel Roosevelt.

Mathematics—

(*From page* 22)

The Alcolac example given above uses an algebraic equation to indicate the possible degree of success of a proposed new product. Dealing with various known (or assumed) factors, it gives an answer. But perhaps the most common instance of mathematics in business so far has been in linear programming, in which the desired objective is known, but the specific ways of achieving that objective must be found.

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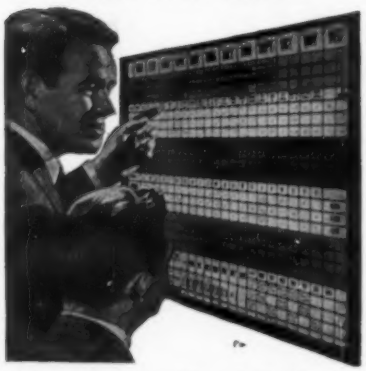

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In linear programming, the objective to be gained must be determined in advance. Linear programming is used in allocation problems—achieving the lowest production cost per unit with known production facilities of varying capacities, or shortest total transportation distance between several warehouses, and several sales points supplied by those warehouses, say. Generally, it can be applied in most situations where all significant factors vary in direct proportion to each other.

Once the objective is known, linear programming techniques will always give the best possible answer automatically, through a step-by-step process which furnishes increasingly desirable solutions until the one best answer—the optimum solution—has been reached. It thus offers a degree of accuracy which is absolute, as contrasted with the degree of accuracy furnished by the Alcolac formula.

Yet each of the techniques is appropriate to its purpose. The Alcolac formula only attempts to aid management to choose between two possible courses—whether to manufacture a product or not to manufacture it. A formula that will indicate a simple yes or no answer is all that is needed. In linear programming, a wide range of solutions is always possible; therefore it is essential to follow the process through until the one best answer is found.

While linear programming has been used mostly for such applications as determining the optimum solution for production, routing, and contract award problems, it possibly has even greater potential value in determining the results of a projected future action, just as the Alcolac formula did in a different situation. Thus, a company in planning a building program for new plants could determine, by repeated runthroughs of given market demand situations, the best possible location of these plants to meet all anticipated future demands. Or a manufacturer of a complicated product, embodying various other semi-finished products, such as an automobile, could determine for a wide range of possible future situations whether it would be best for him to manufacture these sub-products himself or to buy them.

A variety of other mathematical disciplines are useful in models representing a variety of situations. Queueing theory is applied in models representing uncertain or widely varying factors in a service-capacity situation, such as a central telephone exchange, a passenger traffic system, or a cashier's station in a large store. Game theory attempts to represent the range of possible reactions of a competitor to the actions of the company.

In theory, at least, it is possible to represent the system by which a company does its work in a mathematical model, and by manipulation of symbols, achieve maximum system effectiveness. This is stressed as a theory, rather than as an accomplished fact, because mathematical models are obviously most effective when used with measurable quantities, rather than in situations where intangible factors, such as the human equation, play a vital role. However, some successful work has been done in the area, particularly in scheduling work flow in factories, and university teams are now doing further research on the subject.

Furthermore, as more work is done in the field, use of some highly refined mathematical techniques may well permit the element of chance, the unexpected, and unanticipated, to be included in the model, and covered in the results obtained from the model.

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This emphasizes again, however, the wide range of mathematical knowledge needed for design of a mathematical model, which is basic to a formal operations research program. Where does that leave the present executive, who may vaguely remember his algebra, but who is completely at sea with anything more complicated?

Actually, the situation isn't as serious as it looks. Because of the very wide range of mathematical techniques which may prove applicable to particular situations, a true operations research project almost always demands the services of a highly qualified mathematician. The average business executive could not hope to fill this role in the research phases. Once a mathematical model has been designed for any particular phase of the company's operations, it becomes a working tool of the company—and every company today employs a great many tools which its executives are not technically equipped either to design or to describe in every detail.

The important thing for the executive to know is that such tools either exist or can be created, how reliable they are, and how they operate in a general fashion.

This, no matter how abstruse the mathematics used in designing the tool, or in this case, the model, is perfectly feasible for the average executive. Moreover, a mathematical model cannot be designed in a vacuum. It is designed as a phase of the formal operations research process, and this process demands the executive who knows the business, or at least that part which is under study, as well as the services of the technically trained men. The executive must interpret needs, the relative weight of factors, the purposes which the company wishes to achieve, before the mathematician can design a model which will help make those needs and objectives more certain to be met. Thus, operations research is almost always at least a two-man job, and ideally in large companies, it demands the joint services and talents of a great many different people.

Technique aids objectivity

Participation in an operations research project will serve to educate the non-technical executive in what can be done and what cannot be done with the various mathematical techniques now available. In the process it will probably also make him a slightly more objective thinker as far as every phase of his work is concerned. A mathematical model can only be as valid as the relative weight given the factors which enter into it. If trivial considerations were given the same emphasis as major ones in the transfer of real information into the symbolic language of the model, the results obtained from the model would be wholly misleading.

This is where the interaction between the executive and the mathematician—or technical specialist trained in mathematics—is so important. This also is an area where much of the confusion concerning operations research has arisen.

Basically, the mathematician ideally is concerned with the major factors only, and not with the details. He is striving to attain a model which simulates in general terms the chain of cause and effect, and so, by insertion of actual figures, actual facts, or a series of projected figures and facts, can give general, valid answers. The businessman, trained in the to-the-penny precision of accounting systems, and intimately familiar with a great many details of his company's operations, is often suspicious of the mathematician's insistance on keeping the factors represented down to a minimum. Here the businessman must learn that various degrees of precision are required for different objectives—an answer is good enough if it shows quite definitely that the company will either lose money or make money by a single

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Moreover, in working with and through operations research, the businessman learns, sometimes for the first time, to think in entirely analytical fashion. There is simply no room in an abstraction for prejudices or hunches. They cannot be represented symbolically. The only things that can be represented are actual factors. In the very real work of evaluating these factors and placing them in a meaningful relationship to each other, a true and proportionate picture of the operation being represented becomes much clearer than ever before.

Operations research, in other words, through construction of the model, simplifies a picture which often is so complex that it cannot be seen in true perspective *except* in model form. This concept is actually no great innovation in business. Other types of models have been used for much the same simplification process for years. Most large organizations use flow charts to describe the sequence of work in their offices or plants—they have to, if any one person is to follow through the entire sequence. An accounting system is, in a sense, a model of the financial structure of a company, as a table of organization is of its personnel structure.

A mathematical model is far more ambitious than these more familiar examples because it is a picture of a dynamic situation, it represents actions as well as quantities, and the various effects of changes in actions or quantities. Because it is dynamic, the model may ultimately influence or even control the realities it represents—results indicated by the model may well determine a particular course of action for the company.

Model not a panacea

But the mathematical model is still in essence a model, even though it includes the elements of change and movement. It still serves the same purposes for which all other models exist in business—to inform, to give a comprehensive picture of a total operation (even when it is a projected operation) rather than a piecemeal picture of one part of an operation.

It is in the last analysis, then, a management aid, a powerful new tool, rather than a mysterious science which will usurp management functions. It gives a picture and a prediction—not a final answer. Management must interpret that picture and prediction, evaluate it—and decide.

Management, in short, must still manage.

Hotel into office—

(*From page* 34)

But President Ludwig's convictions concerning the "new look" for his offices were just as strong as his determination to have a new location for them. Some of the furniture in use in the old PLMI offices was nearly fifty years old.

And strongest of all was his conviction, born of spending much time in the colorful Pennsylvania Dutch country, that most offices were entirely too inhibited in their use of color.

The company took its problem to Lester Pomerantz, of A. Pomerantz and Co., Philadelphia office supply concern, and he suggested that Wanda Norstrom, a Philadelphia architectural designer, be made responsible for the interior design of the new offices.

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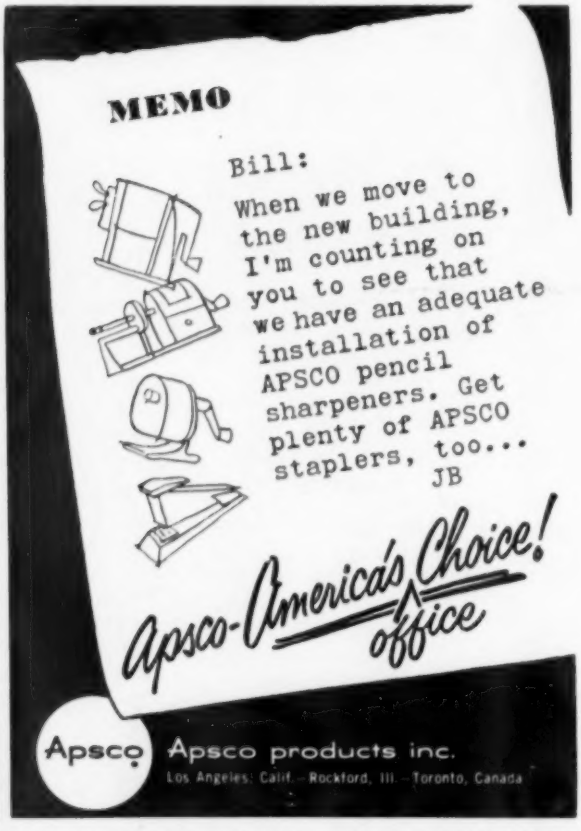
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Miss Norstrom was of the same school of thought as Mr. Ludwig concerning color. Her theory was that insurance company workers deal all day with statistics, numbers, and mathematical data, and that the major role of color in such an office should be to stimulate, to give a lift.

In her phrasing, her objective was to get away from all "rules" in using color.

"All day long, office work here demands preciseness," Miss Norstrom says of the Pennsylvania Lumbermen's offices. "When we use color we want to get away from mathematics. We differ with people who want to use formulas for color, who want to measure it. So much color, so much light, exactly. We say you can't do that when you're dealing with people."

Unorthodox as the approach was, Pennsylvania Lumbermen's bought it. Miss Norstrom was assigned to do the interior architecture for the new insurance offices, including the design of all interior woodwork, and details of structure and placement. Her associate, Eve Peri, worked with her on color selection, and choice of fabrics.

The team worked from mock-ups, each of which in turn was passed on by PLMI officials, for each room as far as color and layout were concerned. Swatches of fabric accompanied each mock-up.

The mock-ups accepted, the work progressed. The sombre interior began showing a startling, but pleasing array of colors. Thirty-eight different color tones were used in decorating the new offices, and they were not segregated so that only two or three were used in each room. Bright yellow was used for the basic wall color in most interior offices, cut off from sunlight, but the many vari-sized columns that remained from the hotel construction were painted in a wide variety of hues within the basically yellow offices: persimmons, blues, lemons, tans, limes.

Long windowless corridors, forced on the offices by the basic box structure of the converted building, presented a problem. One five-foot wide corridor was eighty-five feet long—a tunnel-like structure if ever there was one. How to prevent its looking like a tunnel? Color again solved the problem; color and light. One wall of the corridor was painted "golden squash;" the opposite wall was covered with a grass cloth on silver paper. Suspended from the white ceiling are bright brass hourglass lamps, turned horizontally so that the lamps' open ends create a pattern of light and dark on the brightly colored walls.

The use of a wide range of varied colors is even carried into the carpeting. In the "golden squash" corridor, the carpet is composed of sections varying in length from eight to twelve feet. These sections are laid in such a way as to achieve a random pattern of horizontal color bands—gold, black, light tan and grey.

Other carpets in the handsome new offices were also specially created. Both reception lobbies on the second and third floors of the new offices are carpeted, with a specially woven pattern simulating twigs and acorns against an earth-colored background, another extension of the PLM theory of bringing the "outdoors" into its offices. Moreover, the oak tree is the PLM symbol, and the oak tree's genesis is the acorn.

The general offices have not been neglected in their furnishings any more

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than they have been in the wide and generous use of color. When the company moved its offices early last month, all employees found themselves equipped with new desks and chairs. Equipment, too, was new—or at least looked new. The only equipment PLM transferred from old offices to new was some specialized equipment for insurance operations, and punched card tabulating equipment. All units were spray painted before the move in colors that would harmonize with the basic wall and ceiling colors of the area where they are located. Thus, many of the machines in the PLM offices now are garbed in hues which even their own manufacturers would not recognize.

The partitioning used for offices is as original as everything else in the PLM offices. Small private offices around the perimeter of the general office areas are created by unusual partitions. The partitions separating these offices from each other, and from the general office are quite low—not quite head height, and they carry out the assymetrical pattern found throughout the new offices. Thus, one such office will be fronted with one wood panel, one clear glass panel, and a swinging formica door painted in a bright color. The next office may have one wood panel; one glass panel clear at the top, sandblasted at the bottom to give a half-clear, half-frosted glass effect; and a swinging door in a completely different color.

All such partitions are, of course, movable, and may be rearranged as the need for private office space varies.

Executive offices also employ a partition device, although they seem in every way to be completely enclosed traditional walled offices. Ceiling height wooden storage units are used as walls, and these, of course, can be moved as the company's needs dictate.

Color effectiveness proven

Frivolous as the wide swath of colors used under "hue-thenics," the name the designer has coined for her color theories, may seem to some, Miss Norstrom can quote a long history of developments indicating that the use of color really can increase efficiency, and improve employee morale. First used in factories, it has, of course, since been adopted by many offices. Few, however, have used it nearly as extensively —or as lavishly—as Pennsylvania Lumbermen's.

And, gay as the appearance of the office may be, a core of sound planning underlies its bright appearance. The colorful fabrics used in upholstery, bright and presumably liable to rapid soiling, have been specially treated so that they will resist dirt. The rainbow-hued offices have been laid out according to a sound and intelligent work flow pattern. Basic routine work patterns—the processing of routine daily reports from agents—follow a simple straight line progress, in which associated departments are able to pluck needed information from the data in transit.

Bright and efficient, the new offices are the most ambitious test yet made of the validity of "hue-thenics"—the effect of color on the attitudes and actions of people. But the theory's partisans felt that the first reaction of PLM employees as they moved into their brand new offices on Monday, June 4, augured well. Employee reaction was best summed up by one bookkeeper who rhapsodized:

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NOMA—

(*From page* 25)

was eliminated, it was found impossible to indoctrinate the great mass of employees.

"We are coming to realize more and more that the first line supervisory level is extremely important to any communications show," Shafer continued. "Good communications within a company must bring in the first line supervisory level since they are the people in direct day-to-day, face-to-face, communication with the clerical group.

"The best thing the bank got out of its questionnaire, its survey, to determine why some of the better rated girls were leaving to go to work for small employers was the revealing of this communications block between the middle management level at the bank and the first line supervisory group. That, in itself, was worth all the time and money that was spent on that turnover study."

The other Tuesday morning two-session meeting, on Forms Control, held simultaneously with the discussion of supervisory problems in the office, was conducted by Frank Knox, of the Frank Knox Co., Cleveland.

Mr. Knox divided his two-part session into a discussion, first of gaining management endorsement and backing for a forms control program, and organizing the program, and, in the second part, of the mechanics of forms design.

"If we can solve the problem of management participation, of how to get management to O.K. the spending of money, to assign the personnel, to find qualified personnel for a forms control program, we have actually licked our basic problem, "Knox told the group. "The mechanics of forms design will come along rather easily."

He listed as a first essential the setting of strict definitions for a forms control program. It has nothing to do with work measurement or work simplification; those are other areas, he pointed out. The area of operations of forms control is strictly limited, he declared.

"If you are really talking about forms control and not something else, you must make it clear, first to yourself, and second to everybody else, that you are not talking about revising all the procedures of the company," he said. "You will control your form only insofar as it governs the efficiency of the clerical operation. You will not govern the form in the determination of the operation itself. You will control the method of reproduction of the form. You will not govern how many of the forms are used a year."

He listed as additional important responsibilities of a forms control unit, control of the form numbering system, control over the functional index of forms, and responsibility for seeing that two forms do not exist for the same basic purpose.

Basic requirements for a successful forms control program, the speaker said, are:

Management backing.

The proper mental attitude toward such a forms control program throughout the organization. This depends to a great extent on management backing in the first place.

A concrete plan of action, which must include a specific statement of where the forms control unit is located in the company and just what its responsibilities are. Also, the plan should outline the lines of demarcation and interrelationships between forms con-

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trol personnel and methods and procedures personnel.

"The third requirement of the plan of action is the relationship between the forms control unit, and all of the line organization—the departments or units using the forms," Knox said, "and, fourth, there must be a carefully thought out control over the reproduction equipment in the company."

Also vital to a successful program are people trained in forms control, the speaker maintained, and this requires formal training—not a casual visit to another company, or a hurried reading of a book on the subject.

Following the creation of a plan of action, Knox said, a unit must be established. Such a unit, he warned, should be a staff organization, and not be tied to any line department. It is also essential that it have direct reporting access to a fairly highly placed officer in the company.

As the unit gets into its work, it should cooperate closely with the line organization and should leave all responsibilities outside of those entirely its own to the line organization. Thus, according to Mr. Knox, forms control should not be responsible for purchase of forms or for the stocking of them. Through the specifications it writes for forms it controls the purchasing department in the buying of forms; through the anticipated annual volume it sets for each form, it guides the line organization in warehousing and distributing forms.

"If you standardize your form, design it, get it approved, write the specifications, and pass it on, then wash your hands of it until a change is needed, at which time you should get in the act again," he told the group. "Do not try to review every subsequent requisition for the form. If the line organization can't discharge such a simple administrative duty as deciding how much paper to use, then you haven't got very good line administration."

(To be continued)

Automation—

(From page 59)

Watson said that the new unit can print a million names and addresses for a mass mailing in 75 hours at a total cost of $2400. Previous methods required the use of five machines for a total of 200 hours at a total cost of more than $5300, he reported.

Canadian office orders computer

The first electronic data processor installation in a Canadian insurance office will be made in the Montreal Head Office of the Sun Life Assurance Company of Canada, which has announced that it plans to have a Univac II in operation by March of next year.

Low cost, high speed unit offered

Logistics Research, Inc., Redondo Beach, California, recently introduced its new ALWAC 800 series electronic data processing system which it claims offers speed, storage capacity, and versatility equivalent to that provided by million dollar computing systems at one-eighth the cost.

The ALWAC 800, which will sell for approximately $125,000, can perform 11,000 additions, 2,000 multiplications, or 13,000 comparisons per second according to the manufacturer. Internal memory may be supplemented with as many as ten additional magnetic drum storage units, or multiple tape storage units.

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Automation Information

Cudahy Publishing Co., 6141 N. Cicero Ave., Chicago 30. Brochure on the confidential reporting service offered by John Diebold & Associates, Inc., management consultants, on the use and application of electronic data processing equipment. **(1)**

Indexing Systems

Ezyindex Products Corp., 153-13 Northern Blvd., Flushing, N. Y. *Color —to Assure Maximum Reference,* a four-page brochure, in color, on ways of achieving improved indexing through the use of color. A check list and specification sheet is enclosed. **(2)**

Terminal Digit Filing

Remington Rand, Div. of Sperry Rand Corp., 315 Fourth Ave., New York 10. Brochure CH-1016, a 4-page, illustrated case history on the installation of a terminal digit filing system at the Glens Falls Insurance Co. **(3)**

Visible Index Books

The Recordplate Co., 16 E. Holly St., Pasadena 1, Calif. *Ringbooks of Tomorrow,* Catalog No. 10, covering ring binders, forms and sheets, address books, appointment books, sorters, and other equipment. **(4)**

Paperwork Control and Records Management

Sunderland & Associates, 806 S. Robertson Blvd., Los Angeles. *Do We Keep It or Throw It Away?,* a folder describing records management services. **(5)**

Preventing Business Frauds

Cummins-Chicago Corp., 4740 N. Ravenswood Ave., Chicago 40. *Once Is Enough,* a 12-page booklet on the uses of perforation as a means of cancelling invoices and supporting papers so that fraudulent alteration becomes impossible. **(6)**

Business Trends Chart

Dictaphone Corp., 420 Lexington Ave., New York 17. *Business Trends and Progress,* a four-color chart on economic cycles and business growth, as seen in this country since 1800. **(7)**

Floor Maintenance

Walter G. Legge Co., Inc., 101 Park Ave., New York 17. A motion picture, in color and with sound, called *Modern Floor Maintenance,* on right and wrong methods of cleaning and polishing floors. Showings of the film may be arranged through C. V. Starrantino, vice president of the Legge Co. **(8)**

For further information, use Reader Inquiry Card on page 82.

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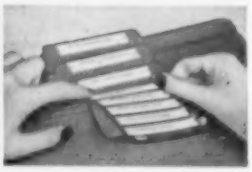

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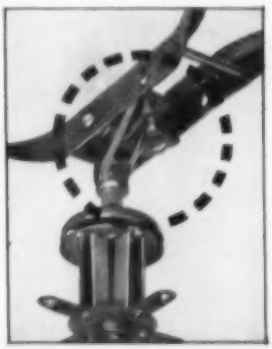

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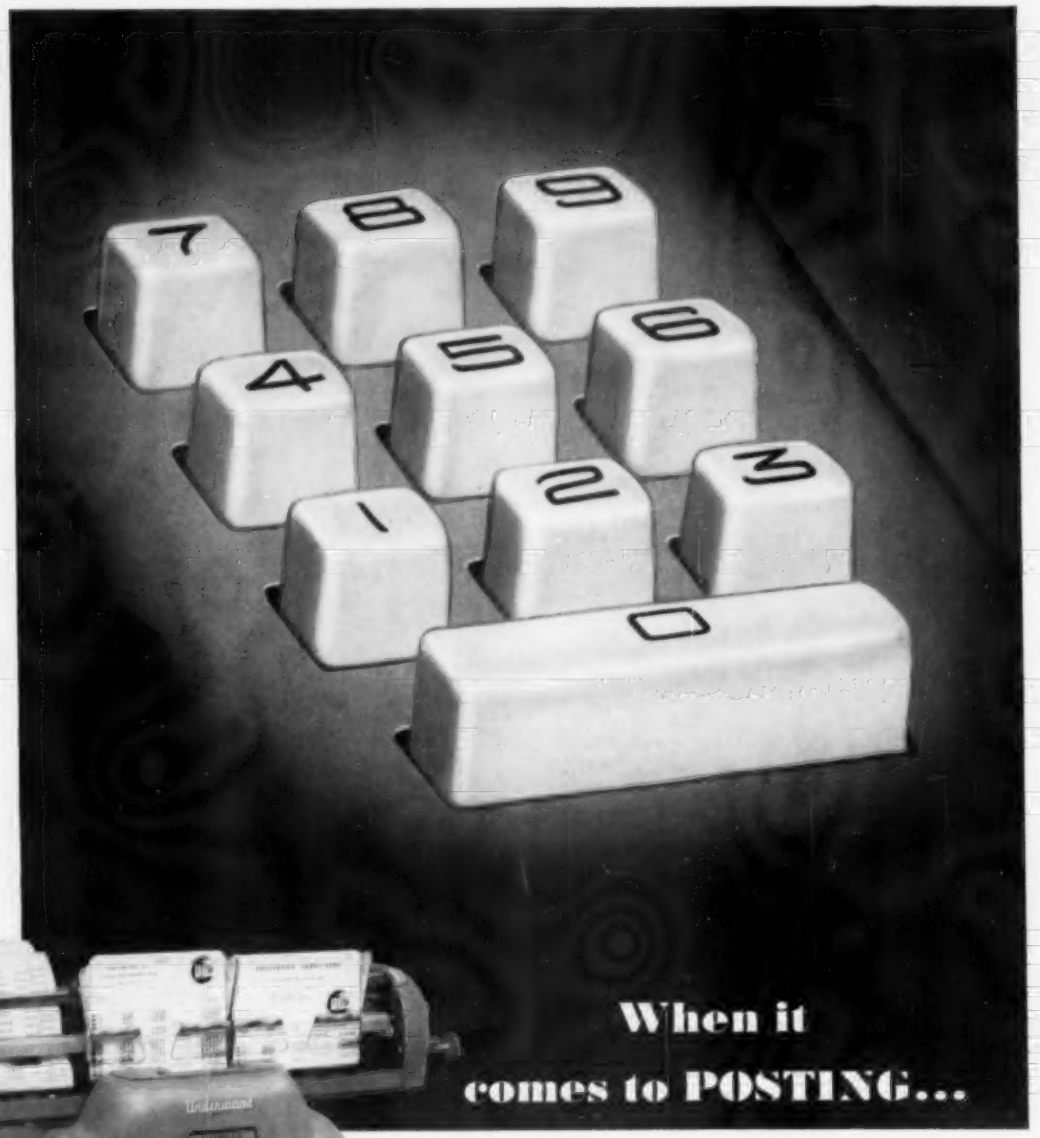

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